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AMERICAN
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THE KOTTMANN REACTION AS APPLIED TO PSYCHIATRIC CASES.*

BY

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Kottmann [1, 2] in 1920, postulating physico-chemical serum change, particularly as regards colloid dispersion state, in thyroid dysfunction, on the basis of extensive serum studies in pregnant women, devised the reaction now bearing his name which, it appears from his own and later work by other investigators, affords a reliable clinical index of thyroid function. This test, a simple photechemic procedure, based upon the protective property of human blood serum towards colloidal iodine (more marked in hyperthyroid function and less so in hypothyroid states) had been found by Kottmann to be definitely positive or retarded in 12 cases of frank hyperthyroidism and in certain cases of colloid goitre, clinically hypothyroid states, accelerated or subnormal. In his large series of controls Kottmann observed the serum response to be uniformly negative. Petersen and his associates [3, 4] in this country, working with this reaction in 1922 found that of 70 cases, clinically definitely of hyperthyroid type, 65 showed a markedly positive or retarded reaction while two showed only slight retardation; two others showing apparently normal and one subnormal or accelerated response. These workers noted further that in 49 cases of simple or colloid goitre there was no indication of retardation, thus corroborating Kottmann's original findings as indicated in the foregoing. Petersen also studied a large group of control or normal

* Read at the eightieth annual meeting of The American Psychiatric Association, Atlantic City, N. J., June 3, 4, 5, 6, 1924.

sera, to be exact 139, finding entirely normal or negative reaction in all except three, in which a slight retardation was observed.

It was further determined by this group of workers that the Kottmann reaction was somewhat retarded by the ingestion of bromides (Merke [5]) and iodides, by irradiation and massage of the thyroid, and thyroidectomy in exophthalmic cases. Retardation was found too after the injection of thyroxin, but in all these cases not until several days had elapsed (3-5), indicating the effect, as Petersen points out, to be probably an indirect one depending upon alteration brought about through the active principle of the gland upon tissue metabolism rather than through the direct effect of the thyroid principle upon the test reagents at the time of its secretion and contact. Very slight retardation it might be mentioned and quite insufficient to affect the clinical validity of the test was found by Petersen to obtain in cases of bacterial and peptone shock, trypsin ingestion, hemorrhage and following the irradiation of remote organs.

In view of the fact that Petersen observed positive or retarded response in certain cases of fright without evident clinical endocrine complication and Kottmann in a number of " nervous " cases. unmarked by clinical signs of actual hyperthyroidism (nervösität Basedowoid) and in view of the attention now attaching itself to endocrine function in affections of psychiatric type, it was felt that it might prove of a certain interest to study this reaction in a large series of representative cases of this order. This from the literature, it appears, had not been previously undertaken except for the incidental study by Petersen of eight psychotic patients, type, phase and actual psychiatric reaction neither indicated nor apparently observed in long-section.

In this presentation report is made of the Kottmann reaction findings over a series of 754 sera from 291 psychiatric patients grossly negative somatically, save for neuropathologic defect in certain cases, of wide age range, including 163 females and 128 males and studied as far as possible in long section; the validity of the reaction having been first determined upon a series of 20 normal controls and 8 medically frank hyperthyroid cases with results closely approximating those of Petersen and Kottmann.

The actual composition of the case series used in this work is as in Table 1,

TABLE I.

CASES EMPLOYED.

Psychiatric condition.	Number of cases.
Schizophrenia	87
Manic depressive psychosis	82
Psychoneurosis	40
Psychopathic personality	25
General paresis	13
Symptomatic psychosis	9
Mental deficiency	8
Alcoholic psychosis	6
Epilepsy	4
Paraphrenia	3
Epidemic encephalitis	3
Senile and cerebral arterio-sclerotic psychoses	3
Paranoid state, undifferentiated	3
Post traumatic psychosis	2
Cerebrospinal syphilis	2
Paranoia	1

The actual technic employed, essentially that utilized by Petersen, is outlined below:

One c. c. of clear freshly obtained non-menstrual blood serum, drawn uniformly in our cases at 10 a. m., is introduced into a small test tube of ordinary Wassermann type (1.20 cm. x 8.5) and 0.25 c. c. of a 0.5 per cent solution of potassium iodide added and in addition 0.3 c. c. of a 0.5 per cent solution of silver nitrate, both reagents freshly prepared and very accurately measured. After satisfactory mixture by gentle agitation the tube contents are exposed for five minutes to a 500 Watt Mazda lamp at a distance of 25 cm. To facilitate mass work we had constructed a circular rack to be set up at this raidus and accommodating 39 tubes. Following this exposure 0.5 c c. of a .25 per cent solution of hydrochinon is added and the color changes noted at definite time intervals.

In positive cases, there is a very much delayed change from the original creamy yellow color of the tube content to the deep chocolate brown shade indicating complete reduction of the colloidal silver iodide to metallic silver. In normal cases this change occurs very quickly but in hyperthyroid states it is extremely delayed, in certain instances practically indefinitely so. Acceleration as compared to the normal time for change has been noted

in hypothyroid function. The degree of retardation or, as it might be termed, the latent period of the reaction, as indicated, appears to have its basis in a certain protective influence or property of human serum for colloid content, in this case silver iodide, increasing its dispersibility and thereby decreasing its photosensitivity with, in consequence, less ready reduction to metallic silver on exposure to light and subsequent development by hydrochinon. In normal and hypothyroid situations, as investigation seems to have shown, this protective influence seems much less than in states of hyperthyroid function, hence the normal, accelerated and retarded types of Kottmann response in these respective situations as described.

Readings may be made on the basis of actual speed or retardation of silver reduction employing a 5-minute time interval or on the basis of the actual degree of color change after a constant time period. From our experience this latter procedure seemed the most convenient particularly since the retarded or hyperfunction effect soon appeared the outstanding consideration in our material. The reaction was read, therefore, in our work, 10 minutes after the addition of the hydrochinon, utilizing the following numerical interpretation schedule:

0—complete reduction—deep chocolate brown.
1—almost complete reduction—medium brown.
2—moderate reduction—light brown.
3—slight reduction—trace of brown.
4—no reduction—no color change.

In this schedule 0 to 1 were regarded as within normal limits, 2 to 3 as representing moderate retardation and 4 marked retardation. The colors may be read directly although as suggested by Petersen they may be taken colorimetrically against a dialyzed iron standard. The dark room may be recommended theoretically for the test procedure although diffuse daylight upon unclouded days has been found clinically very satisfactory.

Latterly to afford greater range and delicacy we introduced a 5-tube dilution series after the fashion of the gold sol procedure, the amount of serum added to each tube being at 1 c. c., 0.8 c. c., 0.4 c. c., and 0.2 c. c. to the first, second, third, fourth and fifth tubes respectively the amounts of other materials added remain-

ing unchanged. On this basis the following might be regarded as type readings, thus:

10000—negative.
33210—moderately positive or retarded.
44431—strongly positive or markedly retarded.

The results obtained in this study may be simply detailed. Briefly it appears that positive or retarded reaction of varying degree was consistently determined in patients showing tensional or dysaffective reaction quality arising from endopsychic distress and conflict or as in the case of the simple manic phase of the manic depressive psychosis and often in general paresis, elation and exhaltation. The actual diagnosis presented psychiatrically appeared to be of no essential significance, the criterion being apparently rather the affective quality shown by the patient with positive response obtaining in both organic and functional situations so-called depending upon the degree of psychic stress or tension and the emotional quality characterizing personality reaction at the time. In cases where there was no indication of disturbance of this sort the test response was uniformly negative, thus in simple or deteriorated organic states in functional reactions showing indifference, apathy and let-down or pleasant psychotic adjustment and in recovered cases. Of the entire serum series 754, only eight sera failed to show Kottmann reaction corresponding to psychiatric affective quality as indicated through the response of the series as a whole. These cases all exhibited dysaffective reaction clinically with expectation theoretically on the showing of the general case mass of positive response. Explanation of this is difficult and at best highly speculative; possibly a basic hypothyroid status may be postulated or the occurrence of some compensatory glandular or special physiologic or pathologic mechanism, although in these cases clinically, to be sure, no gross evidence of such factors was determined. Further it was found that positive reaction occurred strikingly in connection with those psychotic states, determined by other criteria and by numerous workers, as being characterized by marked associated vegetative and metabolic alteration; thus the catatonic and depressional stupors and acute manic excitements. Of interest is it to note that on long-section study in both these cases, as well as in the others constituting the total series, it was observed that as amelioration became evident in

psychiatric response a lesser and lesser Kottmann retardation was detected and that where no such improvement was observed there was definite persistence of such retardation.

While admittedly of no actual diagnostic value as such yet the application of this reaction to psychiatric case material has led, we feel, to findings of real importance in supplying emphasis, and upon a validly inductive basis, as to the significance of the physiologic substrate in relation to affective response and, especially in this connection, in the light of Petersen's and Kottmann's work, apparent implication of the endocrine system and most particularly its thyroid component; the relative specificity endocrinologically of the Kottmann reaction has been broadly indicated in the work of Kottmann and Petersen and to some extent by ourselves, it having been determined that the feeding of pituitary, orchitic, ovarian and suprarenal extracts for a week in ample dosages to a small series of negative patients produced no evident alteration in actual Kottmann response save for slight retardation effect resulting from ovarian feeding. Admittedly, to be sure, further work on this point is indicated. An added speculation of interest presenting itself on the basis of the findings resultant to this study and also pointed out by other investigators is that of the very definite importance of the psychogenic factor in the development of truly organic thyroid pathology in a somatic or medical sense with actual glandular hypertrophy and frankly clinical signs of thyrotoxicosis. Of really great interest would be the devisement and application to material such as has been employed in this study of analogously direct reactions indicative of the functional activity of other endocrine elements.

The following brief protocols of paradigm cases studied in long-section illustrate clearly the physiologic or endocrinic concomitance above referred to of affect and tension on the psychic level:

PROTOCOLS.

CASE I.—S. P. H. 3704, M. V. White female, 33, diagnosis manic depressive psychosis, manic phase, second attack. Admitted February 12, 1923; discharged September 3, 1923.

This case presented a typically manic reaction with marked elation of affect, definitely increased psychomotor activity and pronounced flight of ideas and distractibility. The course followed was a protracted one practically 7 months, marked latterly by subsidence of manic response with

discharge finally much improved. The Kottmann responses showed marked paralleling between degree of retardation and psychiatric course, thus:

Date.	Condition.	Kottmann.
4- 3-23	Manic	4
4-13-23	Manic	4
6- 9-23	Improved	1
7- 1-23	Improved	1
7-28-23	Much improved	0
8-20-23	Much improved	0

CASE 2.—S. P. H. 4016, G. T. White male, 35, diagnosis manic depresssive psychosis, agitated depression, first attack. Admitted 2-9-24; discharged 3-26-24 recovered.

This case was typically one of simple agitated depression showing profound affective depression with agitational features and delusional ideas of a depressional type thus ideas of unworthiness, personal sin and impending misfortune. The course followed was quite acute, the patient showing marked improvement beginning after about a month of residence with practically complete recovery at the time of discharge. In this case also definite paralleling was observed between Kottmann response and psychiatric course, thus:

Date.	Condition.	Kottmann.
2-28-24	Depressed	4
4-14-24	Slight improvement	3
5-24-24	Practically recovered	1

CASE 3.—S. P. H. 3864, E. G. C. White female, 30, diagnosis schizophrenia, catatonic type. Admitted 8-10-23; discharged 10-26-23.

This case was typically an acute catatonic episode of the schizophrenic order with marked stupor reaction, autism, endo-psychic conflict, withdrawal, inaccessibility, negativism and cerea with improvement manifesting itself after about 2 weeks of residence with gradual progression of the same and discharge finally very much improved and practically resocialized. The Kottmann reactions were as follows:

Date.	Condition.	Kottmann.
8-16-23	Acutely catatonic	4
8-22-23	Acutely catatonic	4
10- 2-23	Practically recovered	1

CASE 4.—S. P. H. 3928, G. G. White female, 53, diagnosis manic depressive psychosis, manic phase, 4th attack. Admitted 10-18-23; discharged 2-7-24.

This case showed classic hypomanic reaction with characteristic overactivity, mood elation, flight of ideas and distractibility. The course was a protracted one with discharge (transfer to Kalamazoo State Hospital) un-

improved after almost 4 months residence. The Kottmann responses remained consistently retarded throughout this period, thus:

Date.	Condition.	Kottmann.
10-19-23	Hypomanic	4
10-30-23	Unimproved	4
11-16-23	Unimproved	3
12- 8-23	Unimproved	3
12-17-23	Unimproved	4
12-28-23	Unimproved	4
1-15-24	Unimproved	4

CASE 5.—S. P. H. 3927, E. L. S. White male, 26, diagnosis manic depressive psychosis, manic phase, 1st attack. Admitted 10-18-23; discharged 11-16-23.

This case was typically one of uncomplicated manic reaction showing characteristic affective exaltation, increased psychomotor activity in all fields, with associated destructive trends, distractibility and flight of ideas. The course followed was somewhat intermittent which showed itself distinctly in Kottmann response. At the time of discharge (transfer to Pontiac State Hospital) the patient's condition was definitely psychotic and unimproved as compared to admission status.

Date.	Condition.	Kottmann.
10-18-23	Manic	4
10-22-23	Manic	4
11- 2-23	Quiescent	0
11-10-23	Manic	4
3-15-24 (visit to hospital)	Definitely hypomanic	3

CASE 6.—S. P. H. 3892, H. M. White female, 19, diagnosis schizophrenia, catatonic type. Admitted 9-8-23; discharged 12-18-23.

This patient on entrance was frankly catatonic with definite stupor reaction and associated inaccessibility resistiveness, ambivalences, confusion, conflict, and withdrawal. The acute reaction improved somewhat but with very definite residual psychopathology in the way of ambivalence, evidence of endopsychic distress and conflict, blocking and confusion, depression and occasional silliness and objectively unmotivated laughter. The patient was discharged after about 3 months, condition unimproved, with the Kottmann elevated consistently throughout, thus:

Date.	Condition.	Kottmann.
10- 2-23	Acutely disturbed	4
10- 6-23	Acutely disturbed	4
11- 5-23	Acutely disturbed	4
11-20-23	Acutely disturbed	4
11-23-23	Acutely disturbed	4
12-13-23	Acutely disturbed	4
12-18-23	Acutely disturbed	4

CASE 7.—S. P. H. 3905, A. L. White female, 44, diagnosis schizophrenic episode in a schizoid psychopath. Admitted 9-21-23; discharged 12-18-23.

This patient was admitted because of a mild paranoid episode of the schizophrenic type of very transient character the patient very shortly after her admission adjusting quite well and showing no objective evidence of difficulty, perplexity or distress. Her reaction on the whole while in residence was one of mild disinterest and apathy and affective neutrality. The Kottmann responses in this case were consistently negative, thus:

Date.	Condition.	Kottmann.
10- 6-23	Not disturbed	0
10-20-23	Not disturbed	0
11- 2-23	Not disturbed	0
11-20-23	Not disturbed	0
11-23-23	Not disturbed	1

CASE 8.—S. P. H. 3922, J. M. H. White male, 27, diagnosis schizophrenia, paranoid type. Admitted 10-12-23; discharged 11-16-23.

This patient on entrance and for some 3 weeks thereafter showed definite tension, excitement and acute endopsychic difficulty and apprehension with marked paranoid trends. After this period, however, the patient's condition improved markedly, the patient adjusting psychiatrically with delusional solution pleasant to himself and with definite subsidence of all dysaffective, apprehensional and tensional reaction. The Kottmann responses in this case were as follows:

Date.	Condition.	Kottmann.
10-12-23	Disturbed	2
10-19-23	Disturbed	3
11- 2-23	Quiescent	0

CASE 9.—S. P. H. 3985, M. R. White female, 31, diagnosis psychoneurosis, anxiety hysteria. Admitted 1-3-24; discharged 3-17-24.

This patient presented a definitely psychoneurotic syndrome with marked tension, anxiety features, endopsychic distress and conflict, depression, hypochondriasis with somatic conversion and a generally socially inadequate and inaffective attitude and reaction with a tendency towards rationalization and adjustment for a time but with subsequent relapse and discharge after about 2 months, condition definitely unimproved as compared to status on admission. The psychiatric course in this case was interestingly paralleled by the Kottmann response, thus:

Date,	Condition.	Kottmann.
1-15-24	Disturbed	4
1-28-24	Disturbed	4
2-18-24	Improved	2
2-22-24	Improved	1
3-10-24	Disturbed	3

SUMMARY.

In conclusion, on the basis of the application of the Kottmann reaction so called to a large series of psychiatric cases it appears that evidence and of an essentially direct type has been adduced as to the fundamental significance of the physiologic substrate and specifically, at least by inference, through this work, of the thyroid unit of the endocrine chain as regards the mediation of affective and feeling reaction on the psychic level and by corollary emphasizing importance of the psychogenic factor in cases showing actual clinical or medical endocrinopathy.

This study is admittedly preliminary and it is only in the hope stimulating further investigation over this avenue of approach that formal presentation is made.

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DISCUSSION.

DR. CHENEY (Opening discussion of Dr. Raphael's paper).—I am sorry not to have had an opportunity of hearing the complete paper of Dr. Raphael, and to have an opportunity to consider somewhat in detail this rather important and certainly interesting subject. I cannot let the paper go by, however, without a word of appreciation for this work, and I hope I voice the feelings of all here in recognizing it as a distinct contribution to that particular branch of psychiatry which most of us are interested in, *i. e.*, a rather intensive study of the possible connection of emotion and physical reaction. This that Dr. Raphael describes is another additional help in this kind of study of our cases. The possible connection between organic conditions and affect, or the emotional reaction, it seems to me has been interestingly demonstrated in the affective reactions that are shown in the cases of lethargica encephalitis seen particularly in children. Children whom we have known previously to have been rather normal in their emo-

tional control, suffer what we know to be a definite brain disease and then showing after that a very distinct loss of emotional control. That condition it seems to me, brings to our attention the possible connection between structure and emotion, and this procedure that Dr. Raphael has discussed is another contribution to that type of investigation and I am very glad to have had the opportunity to have heard his presentation.

Dr. Barrett.—I have followed this work of Dr. Raphael's during the past year with much interest. As the work progressed one gained the impression that the Kottmann reaction was not proving to be a test of much value in differential diagnosis among the psychoses. It, however, seemed of very definite value as an index of physiological changes that had some correlation with the affective reactions. In a number of instances it was shown that, while outwardly the behavior of the individual gave no evidence of affective tensions, the Kottmann reactions were as positive as in states of hyperthyroidism. This indicated that one might infer that inwardly there were quite intense affective disturbances.

One familiar with recent physiological researches in relation with neuropsychiatric problems must be impressed with the close correlations that exist in the body physiology and the nervous system. What has already been done, notably the investigations of Cannon and his associates, has given to us fundamental data. Such work as Dr. Raphael has presented in this contribution is another valuable contribution to this field.

Dr. Groeneveld.—I am very glad to make use of your hospitality by asking two questions. I do not get the point whether Dr. Raphael expressed the idea that the degree of the emotional disturbances could be expressed or demonstrated in a certain way in the type or in the degree of the reaction.

Another question I should like to ask is as to whether that reaction has been tested out in many organic diseases, especially in various diagnoses in internal medicine. Because it would be interesting to see whether there are some positive reactions in that field as well. In that case it would not be quite a reliable symptom of emotional disturbance in cases which show any parallelism between the patient's emotional expression and positive reaction.

In conclusion I want to say that in the actual stage of our knowledge on emotional disturbances, it seems to me more safe to discriminate between emotional expressions of the patient and the emotional disturbances, which ought not necessarily to be considered as the main disturbance in the disease.

Dr. Gibbs.—This work is to be praised as an effort to study physiologic function in psychotic reactions of functional nature. The chief merit of the work is that it offers additional evidence of a disturbance of metabolism in the acute phases of the psychotic reaction. But whether the Kottmann reaction is specific for the thyroid, as a measure of thyroid function, is open to considerable question. Unless it was shown by Dr. Raphael in the

first part of his paper, which I did not hear, no close relation has been shown between the Kottmann reaction and other definite evidences of hyperthroidism, as basal metabolic rate and pulse rate. Saunders of the Psychopathic Hospital in Chicago has reported that in 105 patients giving a retardation of the Kottmann reaction, no evidence of increased thyroid function could be obtained in 30 per cent.

Levinson, who has sponsored the test in this country, has shown that it can be rendered positive in various ways, as chloroform poisoning and X-ray destruction of liver cells, trauma, and also by giving the patient bromide. This speaks for the test being a non-specific evidence of a disturbed cellular metabolism, of catabolic nature. The test can be rendered positive by adding K. I. to the serum before the test is done. A positive test would therefore indicate an increase of iodine in the blood. There is good reason to think, however, that in hyperthyroidism the thyroid secretion is deficient in iodine. Plummer, at the Mayo Clinic, has reported that when patients with exophthalmic goiter are given K. I. before the operation, the toxic symptoms are decreased.

Dr. Raphael (Closing discussion).—In closing, I wish again to emphasize that this work can be considered only preliminary in nature and further that our findings have not indicated the Kottmann reaction as of any diagnostic significance, but represent purely a contribution bearing upon the organic aspect of affect.

The points brought up by Dr. Gibbs were touched upon for the most part in the introductory portion of this paper. It is admitted, as indicated in our report and as suggested by Peterson also, that Kottmann retardation is specifically a measure of a certain cellular metabolic change, apparently induced preeminently as a result of thyroid overactivity. While certain other factors may induce change in the same direction, as mentioned, they have been found to do so in much lesser degree and further could not be detected as operative in the cases comprising our series. Special clinico-laboratory tests for the determination of hyperthyroidism were not carried out upon our series the same not being regarded as falling specifically within the scope of this investigation which was concerned purely with the Kottmann response as such in individuals exhibiting psychiatric disorder. In many of our cases too during their positive period co-operation was unsatisfactory particularly for such procedure as basal metabolism determination. It was assumed that such procedures had been utilized by the original workers in the determination of the hyperthyroid material utilized by them in their verification of the Kottmann test. It might be added that in our own preliminary work in eight cases of frank medical hyperthyroidism without evident psychiatric complication the Kottmann and basal metabolism tests were both definitely positive. Such added study upon psychiatric cases, however, should be of considerable interest although it is problematical whether unequivocally positive reactions would be secured in what might be regarded as largely transient and essentially physiologic or functional

thyroid hyperfunction characteristic of our material, the Kottmann impressing us in this sense as probably a more delicate index.

As regards organic conditions considered, as was indicated in our preliminary statement, a number of neuro-pathologic types were employed such as general paresis, epilepsy, neuro-syphilis, alcoholic and senile psychoses, and cerebral arteriosclerosis without evidence of abnormal Kottmann response save in association with definite dys-affective reaction. Our series did not include organic cases of purely somatic type save the small series of frankly hyperthyroid cases as mentioned.

THE MALARIAL TREATMENT OF PARETIC NEUROSYPHILIS.*

By NOLAN D. C. LEWIS, LOIS D. HUBBARD and EDNA G. DYAR,
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Part I.—Historical Survey of the Types of Treatment Used in General Paresis (Dr. Lewis).

Since the exponents of the malarial infection method of treating paretic neurosyphilis have enthused many of us with at least a new hope it would seem profitable at this time to prepare a brief review of the whole therapeutic aspect of the problem of paresis. It was early recognized that the disease is extremely resistant to treatment. In 1812 Pinel spoke of a form of "adynamia" (which corresponds to what we now know as g. p.) as one "que se termine souvant d'une maniere funeste," in 1814 M. Esquirol wrote "la complication de la paralysie resiste a tous les moyens curatifs et ne laisse pas l'espoir d'une tongue existence," and in 1820 M. Georget wrote "la folie compliquèe de paralysie ne guerit jamais."

In 1886 Mickle[1] summed up the therapeutic situation as it then appeared in such a complete manner that an extensive quotation from his text is justified. He said: "When he is truly satisfied of the presence of true g. p. the physician knows that the case is almost without hope and curative art without reliable and permanent efficacy therein. Cures or recoveries of g. p. have been reported it is true, but in view of the obscurities that may surround the diagnosis the question has very justly and very often been raised whether the cases said to be cured or recovered were or were not genuine examples of the disease. In some cases the so-called cures or recoveries have in reality been only temporary remissions of the relentless malady, which before long has attained the natural consummation of its course in death. To justify the gravest doubt and most cautious circumspection of reported cases of recovery from g. p. one need only bear in mind how many

* Read at the eightieth annual meeting of The American Psychiatric Association, Atlantic City, N. J., June 3, 4, 5, 6, 1924.

among the cases published as g. p. during the past sixty years have not been genuine examples of that affection and one need only examine the mortality tables of some asylums in which through faulty diagnosis g. p. evidently stands accused of ravages not its own, and yet it is not at all rare to find instances of highly pronounced remission, or perhaps of apparent complete disappearance of all mental symptoms, and sometimes on a superficial examination of the disorders and defects of motility as well—I say on a superficial examination for almost always after active exertion and upon a protracted and accurate investigation being made, the speech, or the tongue, or the lips will betray that fatal ataxia which to the practiced ear and eye cries "no recovery."

Mickle then mentions a long list of authors who have reported cases of recovery with or without treatment and emphasizes that several of these instances of recovery or of prolonged remission supervened on accidents, violent injuries, bone fractures, amputations, and active infections such as erysipelas, profuse suppurative burns, lumbar and liver abscesses, inflammations, and crops of furuncles, also after variola, cow pox and dysentery. Stimulated by these indications Mickle often thought it might be beneficial to therapeutically create large ulcers on suppurating surfaces prolonging the discharge therefrom, but he was unable to summons sufficient moral courage to put the plan into actual operation. Thus he anticipated in a way the recent developments in the treatment of paresis.

Previous to the discovery that paresis was a form of neurosyphilis numerous and diverse concepts were offered to account for its etiology. These supposed causes were usually considered in two groups, the moral and the physical and under the moral causes were listed domestic trouble, adverse circumstances, mental anxiety—worry, and overwork, religious excitement, love affairs (including seduction) fright and nervous shock, while under physical causes were catalogued intemperance in drink, sexual excesses, masturbation, venereal disease, overexertion, sunstroke, accident or injury, pregnancy, parturition and puerperal state, lactation, utero-ovarian disease, change of life, fevers, privation and starvation, old age, heredity and congenital defects.

During the many years that the above listed factors were supposed to play causative rôles in general paresis the treatment of the

disease included as it also does to-day (1) prophylactic measures, and (2) treatment of the established disease, however these attempts were necessarily quite sweeping in order to include the multitude of alleged causes.

Prophylactic treatment was directed toward (a) the prevention of hereditary predisposition through the regulation of marriage—preventing marriage of those with undeniably neuropathic disposition, (b) the prevention of individual predispositions by fostering a good moral and intellectual education well adapted to resist hostile influences, and (c) the prevention of threatening attacks by regulation of the rest hours, diet, exercise and of sexual indulgence, and by relieving every source of mental anxiety.

The various therapeutic measures recommended for the treatment of established paresis may be mentioned in outline as follows:

A. General management of nursing and feeding.

B. Medical treatment.

1. Venesection and leeching in the early cases and in apoplectiform states (Voisin).
2. Blistering the head and spine in acute cases.
3. Repeated cautery to the head and spine, according to which symptoms predominated, or if subacute spinal meningitis existed (Voisin).
4. Cold to the head in the ordinary course, but particularly if congestive or maniacal symptoms existed.
5. Cold baths (Voisin).
6. Prolonged baths of comfortable temperature (Bonnefous).
7. Sinapisms to lower limbs and hot pediluvia to avert inflammatory reactions and apoplectiform attacks especially in the earlier stages (Voisin).
8. Purgatives and simple or aperient enemata in mentally depressed cases (Voisin).
9. Electricity in the initial stage—galvanic currents to the region of the medulla oblongata and to the upper part of the spinal cord—supposed to benefit the disordered speech (Hitzig-Arndt).
10. Mercury and potassium iodid were used in known cases of syphilis (Mickle-Rendu-Myer).

11. Bromids of potassium and ammonium used to diminish mental excitement except in the later stages where it caused anesthesia of the fauces and throat, thus increasing the tendency for food to collect there and choke the patients (Lunier-Mickle).
12. Veratrum viride, employed in moderate excitement (Mickle).
13. Iron tonics (Mickle).
14. Ergot-ergotine (Mickle).
15. Physostigma (C. Browne-G. Thompson).
16. Digitalis-digataline (Voisin).
17. Quinine (Voisin).
18. Nitrate of silver (Bouchut).

These and similar attempts to treat the symptoms and complications of general paresis obtained for many years, in fact until certain epoch-making biochemical discoveries changed the whole aspect of the situation.

In 1908, after about thirty years of constant research, Geheimrath Ehrlich revealed the results of his laborious studies in chemotherapy, having then obtained almost ideal results in the treatment of experimental syphilitic animals with a substance No. 418 (arseno-phenylglycin). After announcing his discovery Ehrlich made the following statement: "If this particular substance which has answered best up to the present should perhaps prove unsuitable for adoption in human pathology—then we must proceed further along the road which now stretches clear before us," and it was necessary for Ehrlich to proceed along that path until he very nearly reached his ideal of a therapy in the sense of a "Therapia sterilans magna" by the production of the famous compound No. 606. It should not be forgotten that the growth of the Ehrlich pharmacotherapy and side chain therapy was closely associated with and related to the researches of Schandinn, Metschnikoff-Roux, Wassermann, Uhlenhuth, Hoffman and others concerned with the discovery and behavior of spirochetes.

Esmarch and Jessen were the first to emphasize the relationship between paresis and syphilis. In 1857 they reported three cases of paresis caused by syphilis, thus starting a controversy which lasted for over fifty years, and terminated in the development of the Wassermann method and in the discovery of spirochetes in the

brains of paretics by Noguchi and Moore.[2, 3] Following this detection of the spirocheta pallida in stained specimens of the brain cortex in general paresis, Marie, Levaditi and Bauchoroski[4] were successful in demonstrating the organism in fresh paretic brains taken at autopsy and studied by the dark field illumination, and soon after a coöperant finding was reported by Forster and Tomasczewski,[5] and by Wile[6] who described the method of procedure for studies on spirochetes from the brain of the living paretic.

For more than four hundred years previous to the above mentioned discoveries mercury had stood as the basic treatment for syphilis in general. Many other drugs had been tried and abandoned in its favor, but the fate of these other remedial drugs was not shared by the special arsenical preparations since after about sixteen years of employment the importance of arsenic in the treatment of this disease is universally recognized.

A tremendous literature has been produced concerning the value and application of the arsenical preparations, but, in a summary way, the methods originated may be expressed as follows.

(a) More or less intensive intravenous treatment.
(b) Intraspinal methods.
(c) Spinal drainage methods.
(d) Intracranial methods.
(e) Artificial production of fever.
    1. Chemical substances (sodium nucleinate, etc.).
    2. Toxalbumins (tuberculin, staphylococci).
    3. Acute disease (malaria, relapsing fever).

Since the various methods and modifications of intravenous and intraspinal therapy and the opinions thereon of numerous investigators are so universally well known to neuropsychiatrists it will suffice to refer to a few of the comments made concerning combined methods. Gilpin and Early[7] in 1916 were the first to advocate spinal drainage after intravenous injections of arsenical preparations and in 1920 Dercum[8] said, in his well-known essay on spinal fluid functions: "Attempts at medication of the brain and cord through the subarachnoid space as in the Swift-Ellis method are unscientific, as substances introduced into the cerebrospinal fluid rapidly disappear by passing out through the arachnoid villi and the lymph spaces without in the slightest degree penetrating the nervous parenchyma—the beneficial effects hitherto ascribed to the

Swift-Ellis and kindred methods are due entirely to the incidental spinal drainage." Therefore he urgently advocated spinal drainage.

Kolmer [9] made the following comment on the Swift-Ellis method "A criticism of the Swift-Ellis system of intraspinal therapy of neurosyphilis may be made because of the minute amounts of arsphenamin detectable as arsenic carried over in the serum secured by drawing blood one hour after the intravenous injection of arsphenamin. This objection is removed by the technic of Ogilvie who adds arsphenamin and by that of Marinesco who adds neoarsphenamin to serum in vitro prior to intraspinal injection, but in both methods the patient may be deprived of the beneficial effects of the intravenous administration of these drugs, which probably constitutes a valuable part of the Swift-Ellis treatment." Kolmer used a plan of combined treatment with mercurials and arsphenamin by which these objections were corrected. He also took advantage of the Dercum spinal drainage theory which assumes that the rapid withdrawal of the cerebrospinal fluid is followed by increased blood supply to the cord, resulting in improved nutrition and facilitating the possible passage of arsphenamin or mercury in the blood to the tissues of the brain and cord; however, Stokes and Osborne [10] after comparing the findings on patients receiving spinal drainage in conjunction with arsphenamin intravenously and routine mercurialization and the findings on patients receiving an equal amount of routine treatment without spinal drainage concluded that there was no superiority in the drainage method.

Intracranial injection methods including intraventricular treatments [11] are less frequently used, as many workers are still timid in the procedure. Schroeder and Helweg [12] treated nine cases of paresis by the cranial subdural route with unsatisfactory results, and following the route described by Wedgeforth, Ayer and Essick [13] McCusker [14] reported on the advisability of the procedure.

Plaut [15] in discussing the results of the various forms of treatment in paresis and tabes concluded that the results were far from satisfactory, and that intraspinal injections had not proved effectual but had modified some of the symptoms and laboratory findings. He also mentioned the then recent (1919) work of the Vienna physicians on induced febrile processes in the treatment of paralytics and Solomon [16] in 1922 after reviewing the recent literature on neurosyphilis concluded that there was no uniformity of opinion

regarding the value of treatment in the various types. His personal experience had been that when treatment was carried on intensively over a long period of time, utilizing the methods indicated, rather satisfactory results could be expected. He too mentioned the attempts of the Vienna school along the lines of artificial febrile therapy. However, before discussing in some detail the febrile methods it seems advisable to further consider some of the more or less recent modifications in chemotherapy.

Professor Sicard [17] gave neoarsphenamin in doses of 0.15 gm. dissolved in 1 c. c. distilled water injected every day or every second day. He asserted that this method of daily small doses subcutaneously or intravenously has given remarkable results in neurosyphilis during his two years' experience with it. He administers thus during the year up to a total of 8-10 grams for paraplegia, 20-25 grams in tabes and 28-30 grams in paresis. Some patients in the course of two years have taken from 40 to 50 grams. According to the author this technic avoids serious reactions, prevents anaphylaxis and the outcome in his 200 cases is at least equal to that with other methods and usually surpasses them.

Bismuth compounds have been used with benefit in the treatment of syphilis of the central nervous system, and have been reported to be particularly valuable in cases where a resistance against arsenic has developed.[18] A notable amelioration in acute meningitis and chronic syphilitic meningitis has occurred from this treatment. In two cases of general paresis the mental manifestations were clearly relieved, and in one case locomotor difficulties were markedly diminished. A. Marie and Fourchade [19] also obtained favorable results and Tixtier [20] found a case of heredosyphilis of the nervous system to be distinctly benefited by tartro-bismuthate. Localized lesions are more easily influenced by the treatment, but even tabetics suffering from repeated gastric crises are said to be benefited by this type of therapy.

More recently Dufour [21] has advocated the assistance of craniotomy in increasing the efficacy of drug treatment in syphilis of the brain. He reported two cases of cerebrospinal syphilis and one of paresis all of which were very resistant to antisyphilitic drugs, but were markedly improved by simple decompression with subsequent bismuth injections, this plan of treatment being indicated after the usual therapeutic measures have failed.

There are many who believe that silver salvarsan offers particular advantages in the therapy of syphilis and Walson [22] has given an excellent concise review of the subject including the literature up to the time of his publication. Among many others who used silver salvarsan Parounagian's [23] study is of interest. He administered silver salvarsan of American manufacture 4290 times to 756 patients, and concluded that the clinical manifestations in all stages of the disease responded to the treatment with gratifying rapidity. His impression was that the response began more promptly and that the lesions resolved more rapidly than occurs with a similar number of treatments with other arsenical preparations.

Tryparsamid (Sodium salt of N-Phenylglycineamidep—Arsonic Acid) has found favor both in the treatment of human and animal trypanosomiasis (Pearce,[24] Chesterman,[25] Smillie [26]) and of certain types of syphilis (Lorenz [27] and Moore [28]). Lorenz and his co-workers using a method combining tryparsamid and mercuric salicylate found it to be more effective that any other form of treatment used in early paresis and in other forms of neurosyphilis. It was found to be advantageous in "Wassermann fast" cases, in those past middle age, in states of inadequate nutrition, and in violent cases of paresis. Because of its potentiality of injuring the optic tract they advised against its use in cases with degenerative changes in the retina. In the experience of Moore and co-workers tryparsamid was found valuable in certain types of neurosyphilis. Their results lead them to be rather hopeful of its value as an effective therapeutic agent.

The action of tryparsamide is well summarized in a recent article by Brown and Pearce.[29] They state, "A study of the action of tryparsamide on the animal organism and on experimental infections produced by trypanosomes and spirochetes showed that, although the drug exhibits no unusual parasiticidal effect, it possesses properties of action which peculiarly adapt it to the treatment of trypanosomiasis and to certain classes of syphilitic infections especially those that call for the use of drugs with high penetrability as well as those that might be influenced favorably by reinforcement of processes of natural resistance. The use of the drug is advocated on this basis rather than on the basis of high potential parasiticidal action."

We now come to a survey of the methods of artificial production of fever in the treatment of neurosyphilis. One of the most recent and striking empirical additions to the knowledge of the treatment of general paresis was the announcement of the work of Professor Wagner-Jauregg,[20, 21, 22] although he had made preliminary observations as far back as 1887 concerning the tendency of paretics to improve following intercurrent infectious diseases and suppurative processes. In his earlier attempts tuberculin and mercury were used with good results, later typhus vaccine was tried and found to yield better and more lasting results than tuberculin, but it appeared that acute infectious fevers might prove more effective, and malaria (tertian type) because it could be definitely controlled was selected for the purpose.

In 1917 he treated nine cases of paresis, six of the nine were favorably influenced and in 1922 (four years after treatment) three of these were still actively and efficiently at work. This stimulated Wagner-Jauregg to use the method continuously, and it was reported that over two hundred cases had been treated with the result that more than fifty were in complete remissions. He stated, "We have seen complete remissions not only in cases of beginning dementia but also in states of severe maniacal excitement with delusions of grandeur and delirium as well as in paralytic attacks." According to the author the improvement continues to progress for a long period after the treatment has been terminated with the result that physical and mental health are restored, potency is reestablished, and the disturbances of speech and epileptiform attacks clear up. When malaria cannot be had for inoculation he advises that tuberculin-mercury or typhus-mercury be instituted.

Delgado[23] reported favorable results following Wagner-Jauregg's method, but Nonne[24] reported 74 clinically and serologically diagnosed cases, on which the technic was practically the same as that of Wagner-Jauregg with the result that complete remission occurred in 8 cases and 18 others were very favorably influenced.

Pilcz[25] in speaking of Wagner-Jauregg's results in 1919-20 states that during that time 141 patients were treated. Of that number 51 completely recovered, 18 had remissions, but were not able to return to their occupations, 57 remained stationary or in incomplete remissions and 15 died. There was no parallelism noted between the degree and duration of the remission and the sero-

logical reactions, but generally speaking the best total results were obtained in maniacal cases and in simple dements, while a less favorable prognosis may be offered in hypochondriacal, presenile and catatonic reactions. During the malarial attacks auditory hallucinations, persecutory delusions, delirious and catatonic states are occasionally produced or exaggerated, but all cease when the quinine cure is started.

In connection with the subject of induced fever in the treatment of general paresis Pilcz has made an interesting observation which is here quoted: "Investigating the final histories of about 5000 soldiers who acquired syphilis in 1880-90 Mattauschek and I [38] found 5 per cent of paralytics. Of patients who had suffered from erysipelas, malaria or other feverish diseases during the first year or two years after their primary sclerosis, not one became paralytic; none of the patients who later became paralytic had such a feverish disease in his anamnesis. Further we know the great differences of frequency of general paralysis and its dependence on race and climate; in the tropics the disease is proportionately much less frequent, although syphilis is there almost endemic. Perhaps this fact is connected with the endemic frequency of malaria, yellow fever, etc., among peoples dwelling in tropical countries."

After treating 298 cases Gertsmann [37] claims to have obtained a complete remission in 38 per cent. Pagniez [36] in referring to recent attempts in Germany to arrest the progress of general paresis by inoculation with malaria or relapsing fever remarked that the percentage of remissions was not high enough to be convincing, but that the manner in which they occurred indicated something beyond a mere coincidence. He commented on the fact that high temperatures have a sterilizing effect on the vitality of the spirochetes in experimental syphilis (chancres); it therefore seemed clear that in general paresis these inoculations inducing waves of elevated temperature must have a beneficial effect. He advised that the patient's tolerance for quinine should be tested before giving tertians malaria.

Redlich [39] also mentions the favorable results from induced malarial fever, which attacks could be readily checked by administration of quinine or arsphenamin, but recalls that in a number of cases various symptoms appeared, such as stupor, delirium, spinal paraplegia, trigeminal neuralgia and in several cases the

majority of which were ex-soldiers epilepsy was observed after malarial inoculations, which facts suggested that the symptoms were expressions of a masked tertian, and attempts have been made to ascribe them to cerebral granulomatosis, neuronophagy, gliosis, and particularly from plasmodial hematogenous embolism.

Mühlens [40] advises how to avoid getting into certain difficulties in the treatment of general paresis with malaria and recurrens. (a) The treatment should be carried on in hospitals free from anopheles, lice and bedbugs; (b) the quinine tolerance of the patient should be tested before injecting with malaria; and (c) since tropica is frequently transmitted from an apparently pure tertian organism, only carefully identified strains of pure tertian should be utilized. He advises that an expert examine the blood daily. Weygandt [41] considers the results of malaria treatment to indicate great progress in the treatment of the disease, and as to its safety, he would not show hesitancy to use it on his closest relations or even himself. Not only has Dattner [42] found good results with the treatment in paretic cases but states that the method has recently been used with good results in secondary and latent syphilis; however, Plehn,[43] while admitting an improvement in the mental condition in at least one-third of the cases of general paresis treated by the malarial method, was unable to observe an improvement of the somatic changes, particularly the pupils, and therefore considered the method to be less promising in cerebrospinal syphilis or tabes dorsalis.

Let us now review briefly some of the impressions gained by the English investigators who have reported on the subject. McAlister [44] completed the treatment in nine cases and of this group two showed marked improvement (one particularly in the mental sphere and the other in the physical), four others showed some improvement, and no change was noted in three, but in none was there distinct deterioration. Grant [45] treated 40 cases for 14 months with the result that three were discharged apparently well and only five others were improved. Purves-Stewart [46] uses with success a combined method by which the early cases were selected and treated by the Wagner-Jauregg technic, after which a weekly injection of salvarsan, neo-salvarsan or preferably silver salvarsan was given. At each alternate salvarsan treatment, sufficient blood is withdrawn to prepare an autogenous salvarsanized serum, which

is then injected into the subarachnoid space at the cisterna magna and roof of fourth ventricle, according to the cistern puncture method of Wegeforth, Ayer, and Essick. In addition to this, mercury is given daily per mouth. This treatment is continued until the mental and physical symptoms have disappeared, and the cerebrospinal fluid has become normal in cellular content and shows a negative Wassermann reaction.

Before concluding this portion of the present survey a few more comments may be made on the literature dealing with attempts to improve the condition of the paretic. Sagel[47] used African relapsing fever with fair results in the treatment of 72 paretics, none died from the injection. Sodium nucleinate injections for the production of leucocytosis for therapeutic purposes has been tried out in this field as well as in many others. Fischer[48] the Prague professor of dermatology asserts that an actual cure of a portion of cases of general paresis can be produced with sodium nucleinate. He bases his conclusions on the results in three groups composed, of 40, 18, and 16 cases—of these 7.5 per cent, 16 per cent, and 56 per cent, respectively, recovered without relapse, while he has found the so-called specific treatments ineffectual, moreover he believes nuclein induces therapeutic leucocytosis better than any other drug, and should be given as prophylaxis in all syphilitics to ward off paresis. In another experiment 12 cases all under 40 years of age, in which he gave over 10 grains of nuclein, 58 per cent showed an arrest in the disease.

Kogerer[49] uses sodium nucleinate, but only as a test for the persistence of the malarial infection. He used intramuscular injections of 5 c. c. of 10 per cent sodium nucleinate on general paretics treated with malaria in order to determine the completeness of disappearance of the infection before discharging the patient. In cases in which malaria had been successfully removed the nucleinate caused little or no temperature and the blood remained negative, while in those not quite free from the infection, the temperature rose higher and malarial chills were induced.

Stärcke[50] believes that the fever which he induces by a special method is therapeutically equal to the malarial method. An intramuscular injection of boiled milk is given in the morning; by evening when the temperature is at its height he injects 0.6 to 0.9 gram of neo-arsphenamin, which sends the temperature still higher.

This treatment is repeated weekly and theoretically depends upon the assumption that the high temperature renders the glial mesh more permeable to arsphenamin and perhaps also to other natural defensive forces.

In a recent review by Gaehlinger [61] emphasis is laid upon the value of both the malarial therapy and upon recent experiments with decompressive craniotomy which is an attempt to permanently relieve the brain from hypertension. It is rather difficult to see how this procedure can prove to be of permanent value, although some cases have been reported as improved through the decompression operation.

The above review is certainly far from complete, but the general literature relative to the subject is almost endless in its extent; however, some emphasis has been laid on the earlier attempts at treatment and on the latest ones, while those methods developed in the intermediate years have not been comprehensively discussed, since they are already a part of the training and structure of every neuropsychiatrist.

Part II.—A Statistical Survey of Paretic Admissions at St. Elizabeth's Hospital Since 1886 (Dr. Hubbard).

The material upon which this survey is based covers approximately 26,500 admissions to St. Elizabeth's Hospital. From these cases 1600 were chosen as suspected cases of paresis. Careful investigation ruled out a considerable number so that the study was made on 1558 cases which had been diagnosed general paresis by the hospital staff. Some of these were undoubtedly re-admissions, but the number of second or third admissions was small and would not invalidate the results. Of the 1558 patients, 1144 were white men, 273 colored men, 69 white women and 72 colored women. These selected cases were tabulated as to age on admission, civil status, result, length of hospital residence of those who died, and present condition of those who were discharged.

Age on Admission.—The usual age at which paretic patients were admitted was between 35 and 39 (Table I) (Chart I). This was true for white and colored, male and female. Only one, a white male, was admitted under 19, but six (five white males and one colored male) were admitted over 70. The women do not appear at the extremes (see Table I) and only three (colored) were ad-

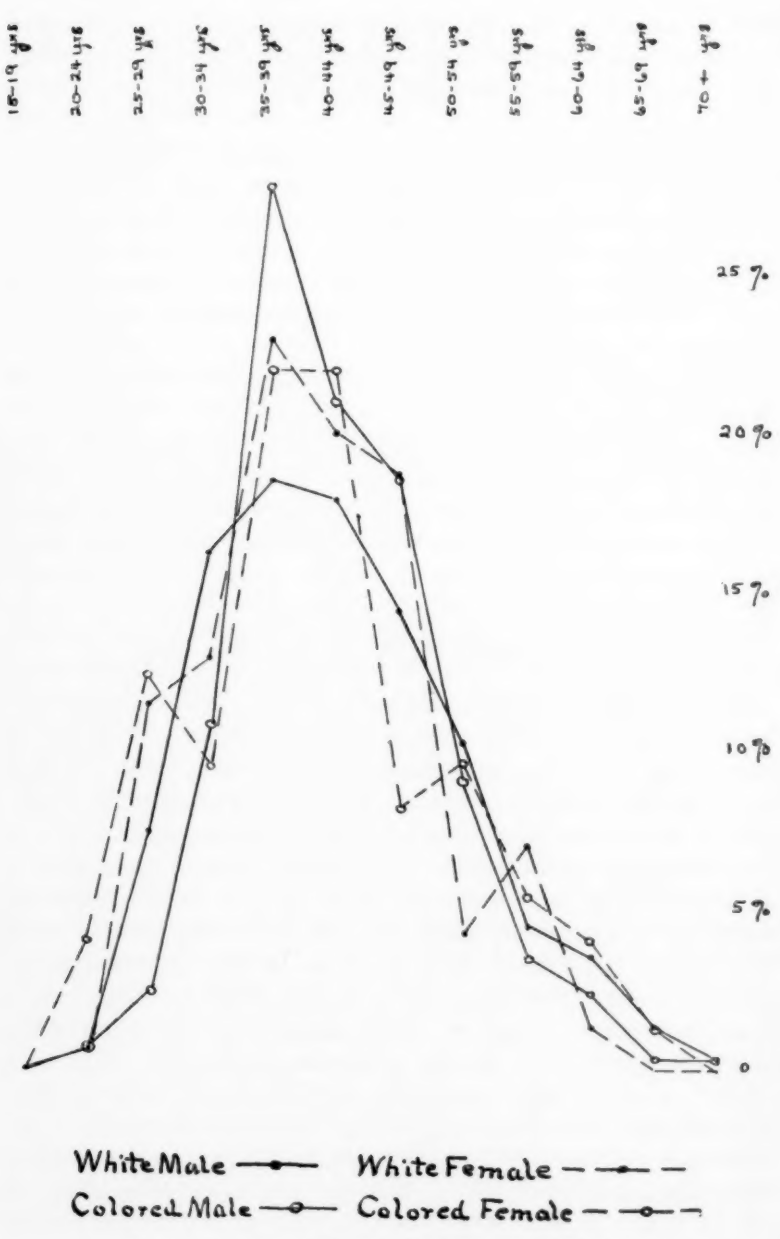


CHART I.—Age of Paretic Patients on Admission.

mitted at an age of less than 25. No white women were over 64 when admitted and only one colored woman.

TABLE I.

SHOWING AGE ON ADMISSION OF PARETIC PATIENTS.

Age.	White male.		Colored male.		White female.		Colored female.		Total.	
	No.	%	No.	%	No	%	No.	%	No.	%
15-19 yrs...	1	0.087	0	0	0	0	0	0	1	0.064
20-24 yrs...	9	0.787	2	0.733	0	0	3	4.167	14	0.899
25-29 yrs...	88	7.692	7	2.564	8	11.594	9	12.500	112	7.189
30-34 yrs...	187	16.346	30	10.989	9	13.043	7	9.722	233	14.955
35-39 yrs...	214	18.706	76	27.838	16	23.188	16	22.222	322	20.667
40-44 yrs...	206	18.007	58	21.246	14	20.290	16	22.222	294	18.870
45-49 yrs...	166	14.511	51	18.681	13	18.840	6	8.333	236	15.148
50-54 yrs...	118	10.315	25	9.158	3	4.352	7	9.722	153	9.820
55-59 yrs...	54	4.720	10	3.663	5	7.246	4	5.556	73	4.685
60-64 yrs...	43	3.759	7	2.564	1	1.449	3	4.167	54	3.466
65-69 yrs...	17	1.486	1	0.366	0	0	1	1.389	19	1.220
70 plus	5	0.437	1	0.366	0	0	0	0	6	0.385
Unknown...	36	3.147	5	1.832	0	0	0	0	41	2.632

Civil Status.—The data obtainable on the subject of the civil status of paretic patients were very incomplete. It will be noted that in 13 per cent of the 1558 cases, no information was available (Table II) (Chart II). Over half the patients were married. In

TABLE II.

SHOWING CIVIL STATUS OF PARETIC PATIENTS ON ADMISSION TO ST. ELIZABETH'S HOSPITAL.

Groups.	Married.		Single.		Widowed.		Divorced.		Unknown.		Total.
	No.	%	No.	%	No.	%	No.	%	No.	%	
White male...	537	46.941	371	32.430	58	5.070	7	0.612	171	14.947	1144
Colored male...	163	59.707	62	22.710	15	5.495	1	0.366	32	11.722	273
White female.	51	73.913	8	11.594	9	13.044	1	1.449	0	0	69
Colored female.	39	54.167	14	19.444	15	20.833	0	0	4	5.555	72
Total ...	790	50.706	455	29.204	97	6.226	9	0.578	207	13.286	1558

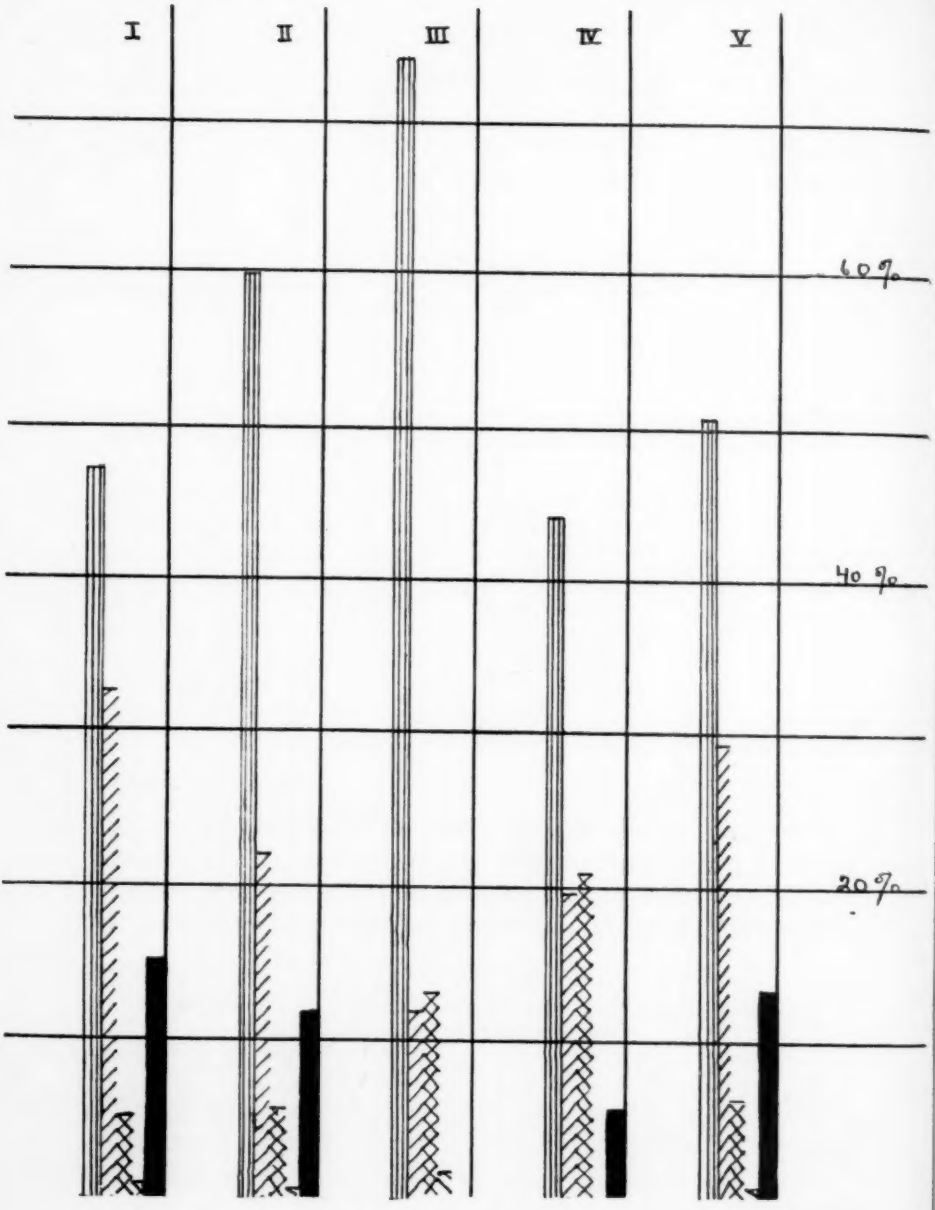


CHART II.—Civil Status of Paretic Admissions.

the case of the white females the percentage is highest (73.913 per cent) whereas it is lowest amongst the white males, in which case it is 46.941 per cent. It is interesting to note that although the percentage of married white women is far greater than that of married white men, the reverse holds true for the colored. Careful investigation failed to reveal a single case in which both husband and wife had been admitted with a diagnosis of general paresis. The white males show the largest percentage of single patients as might be expected from their low percentage of married men. Equally to be expected is the low percentage of single white women. The highest percentage of widowed patients appears among the colored females (20.833 per cent), the white women having 13 per cent widowed and the colored and white men about 5 per cent each. Divorced patients make up less than 1 per cent of the total and are most numerous in the group of white women.

TABLE III.

GENERAL RESULTS.

Groups.	In hospital.		Died.		Discharged.								Total.
					Total.		Unimproved.		Improved.		Recovered.		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
White male ...	108	9.441	853	74.563	183	15.996	81	7.080	94	8.217	8	.699	1,144
Colored male ...	16	5.861	237	86.813	20	7.326	12	4.396	8	2.930	0	.0	273
White female .	8	11.594	52	75.362	9	13.044	6	8.696	3	4.348	0	.0	69
Colored female .	7	9.722	56	77.778	9	12.500	5	6.944	3	4.167	1	1.39	72
Total....	139	8.922	1,198	76.893	221	14.185	104	6.675	108	6.932	9	0.578	1,558

Results.—We observe in Table III and in Chart III that only about 9 per cent of the 1558 cases are in the hospital at the present time. Over three-quarters of the patients died while in the hospital and others have died since discharge (22 concerning whom we have definite data). Of the 14 per cent who were discharged 6.6 per cent were considered unimproved, 6.9 per cent improved and 0.578 per cent recovered. The "recoveries" were eight white males and one colored female. The colored males show the largest percentage of death and the smallest percentage of discharges, whereas the white males show the reverse.

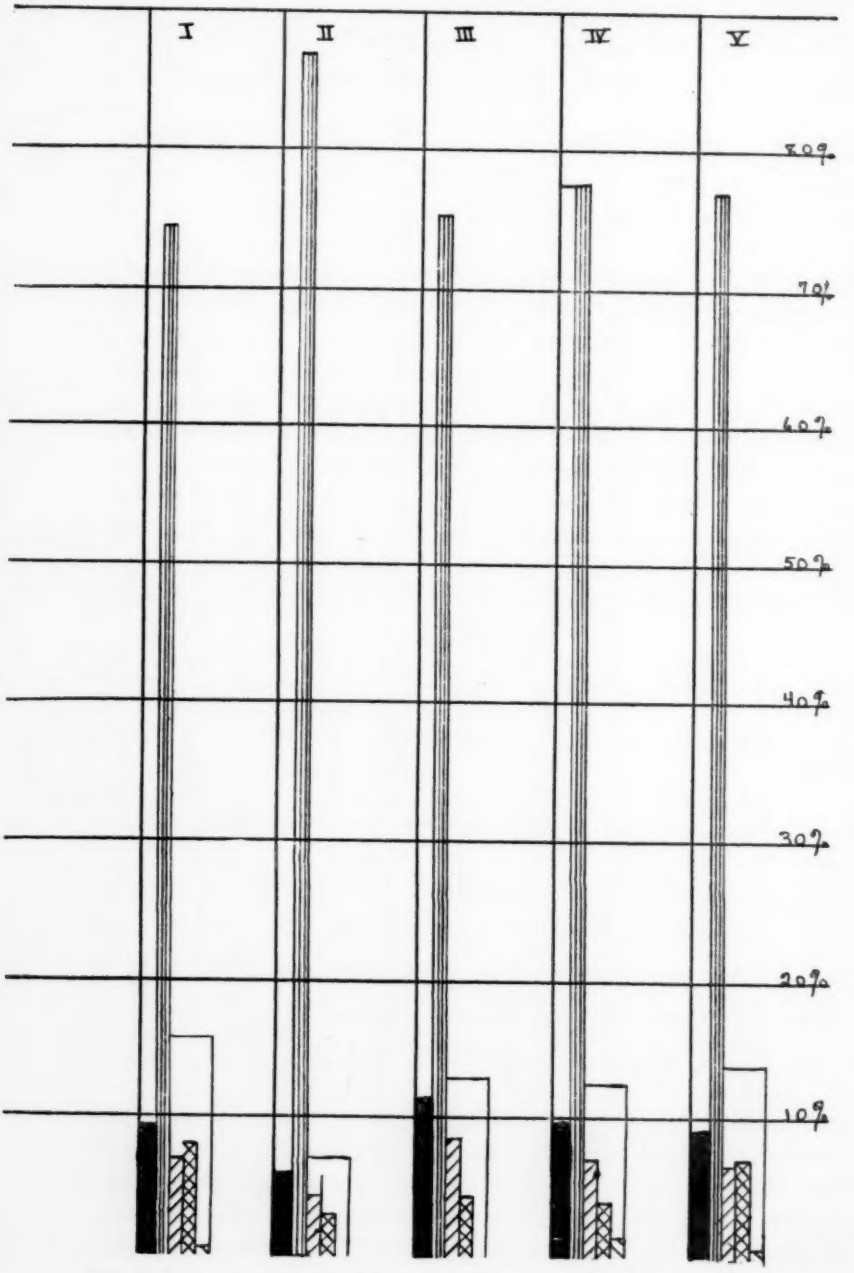


CHART III.—General Results.

Eleven hundred ninety-eight patients died while in the hospital—about 77 per cent. Table IV and Chart IV give an idea of the

TABLE IV.

LENGTH OF RESIDENCE OF PARETIC PATIENTS WHO HAVE DIED IN HOSPITAL.

Time.	White male.		Colored male.		White female.		Colored female.		Total.	
	No.	%	No.	%	No.	%	No.	%	No.	%
1-10 days ..	12	1.407	3	1.266	0	0	2	3.571	17	1.420
10-20 days ..	18	2.110	4	1.688	0	0	0	0	22	1.838
20-30 days ..	18	2.110	7	2.954	1	1.961	3	5.357	29	2.423
1-3 months.	86	10.082	30	12.658	4	7.843	10	17.857	130	10.860
3-6 months.	108	12.662	40	16.878	5	9.804	6	10.714	159	13.283
6-9 months.	101	11.841	31	13.080	3	5.882	8	14.286	143	11.947
9-12 months.	78	9.144	22	9.283	7	13.725	6	10.714	113	9.440
1-2 years ..	220	25.791	47	19.831	10	19.608	13	23.215	290	24.227
2-3 years ..	103	12.075	29	12.236	12	23.529	5	8.929	149	12.447
3-4 years ..	49	5.744	12	5.063	4	7.843	2	3.571	67	5.597
4-5 years ..	24	2.814	2	0.844	1	1.961	0	0	27	2.256
5-6 years ..	9	1.055	2	0.844	1	1.961	1	1.786	13	1.086
6-7 years ..	5	0.586	6	2.531	1	1.961	0	0	2	0.392
7-8 years ..	9	1.055	1	0.422	0	0	0	0	12	1.003
8 plus years.	13	1.524	1	0.422	2	3.922	0	0	10	1.037
Total	883	.....	237	.....	51	.....	56	.....	1197	.....

length of residence in hospital. It will be seen that there is little variation based on sex and color. By far the largest number of patients remained hospitalized for from one to three years before death.

RESULTS OF MALARIAL TREATMENT AT ST. ELIZABETH'S HOSPITAL.

It has always been the policy of the hospital to actively treat paretic patients according to the methods developed at various periods, and of late years the salvarsan methods have been thoroughly tried and have served in the routine capacity. However, it cannot be said that the results have been particularly gratifying.

Sixty-eight paretic patients were selected for malarial treatment by a board composed of four psychiatrists (members of the hos-

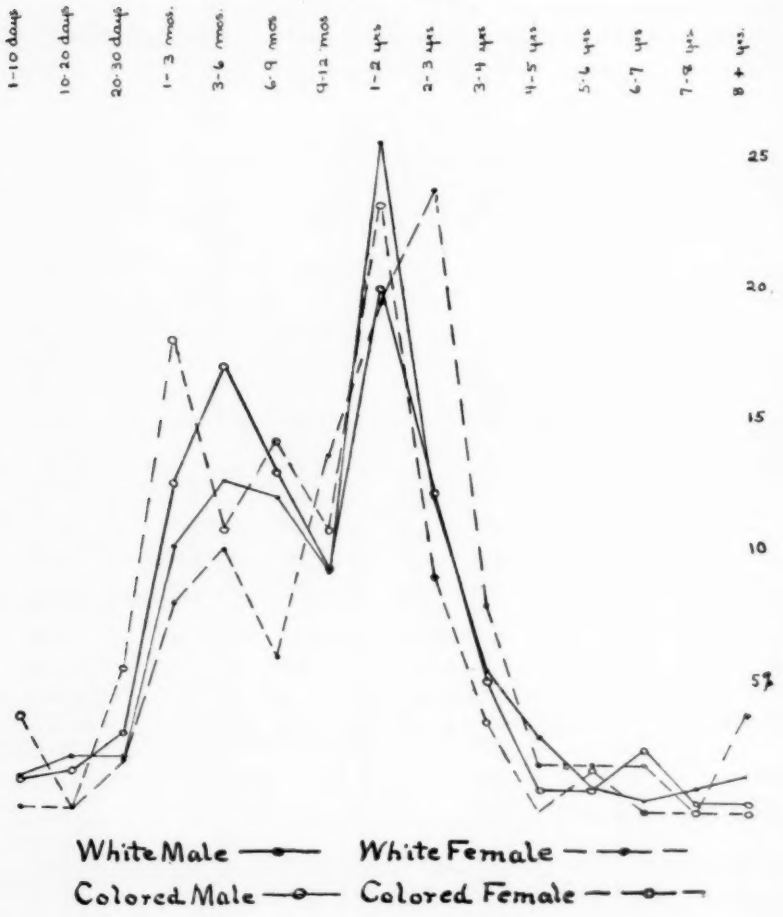


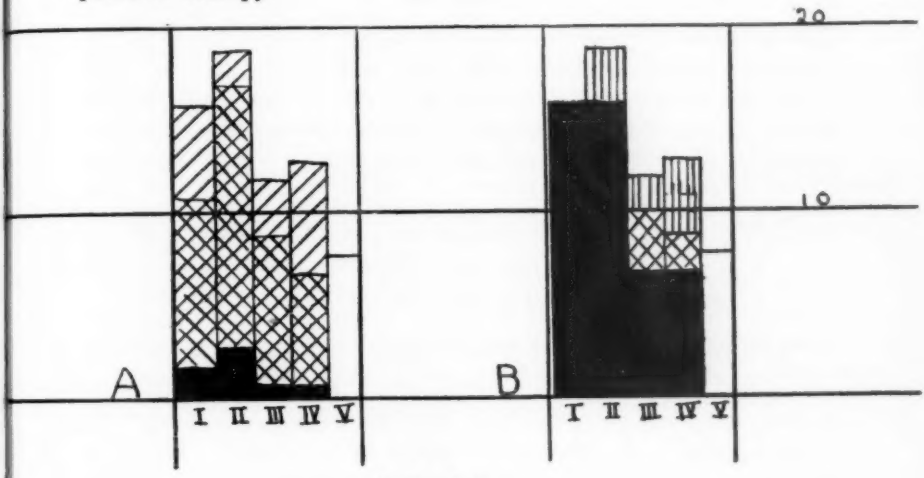
CHART IV.—Duration of Residence of Paretic Patients Who Have Died in Hospital.

TABLE V.

RESULTS OF MALARIAL INOCULATION THERAPY.

Result.	No. cases.	Condition at start.			Paroxysms.		
		A.	B.	C.	Severe.	Mild.	None.
Complete remissions	16	2	9	5	16	0	0
No change	19	3	14	2	16	0	3
Deteriorated	12	1	8	3	7	3	2
Died	13	1	6	6	7	2	4
No information ...	8	..	..	..	..	..	..

pital staff) who classified these patients into A, B, and C groups (Table V). In the A group were those who were in fair condition mentally and physically, in the B group were those who showed some deterioration and were progressing cases, while in the C group were those who appeared almost hopeless from the standpoint of therapy.



I. Remissions.
II. No change.
III. Deterioration.
IV. Died.
V. No information.

In Fig. A the condition of patients at beginning of treatment is shown, graded A, B, C (see text).

In Fig. B the type of paroxysms is shown.

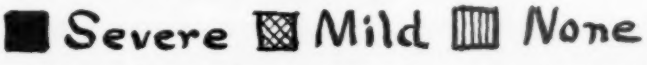


CHART V.—Results of Malaria Inoculation Therapy.

The patients were inoculated with tertian malaria according to the Wagner-Jauregg technic, allowed to have from 12 to 16 paroxysms and then treated with quinine. The results as observed by the same board several months later are recorded in Table V, and in Chart V. By "complete remissions" is meant a remission in all three spheres, mental, physical and serological of which there were 16 patients. Nineteen patients were not notably changed, 12

went on to extreme deterioration, 13 died, and 8 were early transferred from the hospital, after which no trace could be found. Classed among those who did not respond to treatment are nine (see Table V) who failed to become infected with malaria after repeated attempts at inoculation. Thus 16 or 31 per cent remissions occurred among 51 patients who responded to the inoculations and can be accounted for. This result would seem to justify extensive experimentation with the method.

We are indebted to Dr. Watson Eldridge and staff for the clinical information on these groups and a later publication by the members of the Clinical Staff will consider these features in detail.

Part III.—Comparative Histopathologic Studies of Brains from Malaria Treated Patients (Dr. Lewis and Dr. Dyar).

While this group of four brains representing those patients who have come to necropsy is a small one it was thought advisable to make a preliminary report of the findings and to compare the changes found with those described by Solomon and Taft[82] in a much larger group treated by the arsenic compounds. In addition we have studied one brain from a tryparsamide case which shows some interesting features.

After gross examination, fixation in 10 per cent formalin of copper sulfate solution[83] and liberal photography the following areas were sectioned for microscopic study: Dura, frontal, precentral, postcentral, superior temporal, calcarine and hippocampal cortical areas, lenticular nucleus, thalamus, corpora quadrigemina, choroid plexus, cerebellar cortex and dentate nucleus, the three hind brain segments and the cervical segments of the spinal cord.

Preparations were made from the above areas, according to the routine H & E technic for general relations, the Sheldon method[84] for ganglion and plasma cell reactions, Mallory's phosphotungstic acid hematoxylin for meningeal, vascular and glial changes. Herxheimer's (Hematoxylin counter stain) Scharlach R for fat, Orcein for elastic tissues, Jahnel's[85] stain for spirochetes, Weigert's myelin sheath stain, Bielschowsky technic for nerve fibrils, Campbell's nerve fibre stain[86] and iron hematoxylin.

Summaries of the case histories and the histologic findings in the brain revealed by the above technical procedures are therefore presented:

OBSERVATION I.—White, female, age 33. Admitted June 13, 1921, died May 23, 1923.

Clinical Notes.—Very little information could be obtained of the patient's early life. Father was a farmer, a Protestant, strong and well, and met his death by being gored by a bull. Mother said to have died of "paralysis." The patient was a special favorite of her father but never got on well with her mother. She was a bright child, went to country school and was sent to a convent at 16 years of age by her mother who was Catholic. The patient was adverse to this and escaped most immediately, marrying a race track owner, an "all round sport," who drank heavily and abused her. She divorced him, entered a nurses' training school and graduated at 22 years, met her present husband and married him four years ago.

First symptoms of present illness became manifest about six months before admission when the patient was depressed, suffered with insomnia, lost her ethical sense as shown by writing and exhibiting improper things, became easily excited and profane. Her husband reported convulsive attacks of petit mal type extending over a period of years. She also had been subject to peculiar attacks beginning with irritability when she would become very angry with him. Following which she would fall in a "faint," become unconscious, froth at mouth and "drop like a shot." While unconscious, her limbs would jerk, would bite her tongue and very frequently defecate and urinate. During one of them she had a four-month miscarriage. Six months before admission she began to act peculiarly, told curious falsehoods, used obscene language, upbraided her husband for not doing things he had planned for her. Wassermann negative at this time. Ten days before admission she had an attack of right hemiplegia with loss of speech followed by a second attack four days later.

On admission she was confused, silly, irritable, and in such a condition that a complete examination could not be made for several months. There was no evidence of abnormal sexual habits and she denied a venereal infection. She was not oriented for time and place but apparently was for person. Physical examination was negative except for diminished reflexes on right side, pupillary sluggish reflexes and grip of right hand diminished. A Binet-Simon test was made with basal level of three years and no credits beyond seven years. X-ray report negative for brain tumor or abnormality of sella turcica. Blood Wassermann was reported one plus at one time and negative at another, but spinal fluid was typically paretic. Until this time patient had been considered epileptic.

A mental examination showed the patient to be smiling, superficially pleasant but very irritable. Stream of talk active, but rambling. She quibbled over questions, tried to get the examiner to answer them, asked to have them repeated again and again, and refused to answer because it made her nervous. She denied hallucinations and delusions, thought she was sent

here for cold packs, denied energetically that anything was the matter with her mind. Orientation poor, memory for both remote and recent events was very poor. She complained of confusion, nervousness and weakness. She talked continually of being hungry, wanted something to eat ("meat, vegetables, eggs, pepper and salt"), egotistic, very difficult for her to comprehend and there was marked disorder in the field of attention.

Given malarial inoculation April 19, 1923, and temperature remained practically normal until May 1, when she began to have elevations accompanied by chills. After irregular temperature curve and chills she died May 22.

In general this patient's course in the hospital was one of physical and mental deterioration with frequent convulsions. In April, 1923, she was selected for the C group (advanced paretics) for malarial inoculation (she had had no previous antisyphilitic treatment) with the tertian type. She had two very severe paroxysms three days apart, with irregular temperature around 104° and her general physical condition was so poor that the chills were stopped by quinine. Her condition then began to improve and reinoculation was attempted, but failed, however, three weeks later she developed an irregular temperature curve with chills and died.

Necropsy Findings.—The general autopsy findings of interest were diffuse bilateral bronchopneumonia, patchy productive nephritis with acute parenchymatous changes, and acute splenitis. The spleen was enlarged, weighed 260 grams, and the capsule was thin and smooth, the normal markings being practically obliterated. The substance was brown, pigmented and extremely softened. There was no characteristic malarial pigmentation in the other organs of the body.

The brain weighed 931 grams and the surface was covered with a thin, transparent, slimy exudate. The cortex showed general atrophy, marked congestion with blood diffusion, and tendency to capillary rupture, but the clouded pia stripped easier than is the case in the usual paretic brain, probably because of the presence of considerable edema through the structure (Fig. I, Plate I). There was considerable superficial softening of the convolutions and of the cerebellum and brain stem structures. Sclerosis of the limbic lobe was marked, and particularly accentuated in the hippocampi and along the tips of the temporal lobes.

The greatest atrophy was shown in the cortex of the islands and in the basal ganglia structures which were notably shrunken. The ventricles were markedly dilated (Fig. II, Plate I) and presented a thickened, irregular, granular ependyma. The gross cut sections presented a yellowish tinge which was probably due to coloration from the release of blood pigments.

Microscopic Examination.—(a) Pial Edema and Infiltration: The meninges covering the hind brain sections were moderately infiltrated with the usual plasma cells and lymphocytes, but the cerebellar membranes exhibited very little exudate. The pia arachnoid covering the cortex of the hemispheres was greatly widened, markedly edematous (Fig. III, Plate II), and moderately infiltrated mainly with lymphocytes and polymorpho-

nuclear leucocytes. In some areas the pia was sclerotic and showed many small adhesions to the cortex; this was particularly true of the temporal regions.

(b) Perivascular Infiltration of Lymphocytes and Plasma Cells: The perivascular spaces of the hind brain segments were on the whole free from cellular exudate, but very occasionally a vessel exhibited a dense perivascular infiltration; however, sections from the basal nuclei show a generalized moderate perivascular exudate composed of plasma cells, lymphocytes, mast cells, and polys.

All cortical sections disclosed a perivascular exudate of lymphocytes, plasma cells, polys and irritation forms (Fig. IV, Plate II), however, the hippocampal cortex showed a diffuse perivascular infiltration, but with only a few cells in each group. In fact the hippocampal regions resembled in every way, and particularly as far as exudate was concerned, the cortex of an untreated case of paresis.

(c) Adventitias—Blood-Vessel Reactions: Hyaline changes were frequently observed in the vessel walls of the anterior hind brain segment, but new formation capillaries were here not numerous, nor were they greatly increased in the cerebellar cortex.

Cerebral cortical sections showed a moderately dense mesh of new formation capillaries, a general increase in the adventitias, and a thickening of the walls with hyaline degeneration in the larger vessels. In the hippocampal sections numerous capillary thromboses were encountered, as well as a marked new capillary formation reaction.

(d) Marginal Gliosis—General Glial Cell Reactions—Ameboid Glia: In the hind brain segments there was a marked neurogliosis of both motor and sensory nuclear areas, and neuroglial granulations of the ependyma of the floor of the fourth ventricle and of the aqueduct. The ependyma of the lateral and mid-brain ventricles was also badly damaged. There was very little increase in the neurogli aof the cerebellar layers, but some numerical increase was noted along the purkinjian area.

There was an advanced general neurogliosis of all cortical zones and of the white substance, and neuroglial phagocytes were active, particularly in the frontal areas. Marginal gliosis was pronounced in nearly all sections. The hippocampal sections showed a very disordered architecture and an advanced general neurogliosis.

(e) Neuron Cell Changes: The nerve cells of the hind brain segments were all quite badly damaged; the cells of the inferior olives and of the motor plate showed severe degenerations, and were in various stages of disintegration. It may here be remarked that the blood-vessels in these areas were notably involved with exudate.

The cells of the thalami and of the lenticular nuclei showed principally the acute nerve cell degenerations of Nissl. In the cerebellum there was a distinct numerical reduction in the purkinjian cells, and the remaining ones were shrunken, hyaline, and there was an increase in the width and density of the perinuclear "membrane."

The neuron cell layers of the cortex were badly disorganized and replaced by mesoblastic and neuroglial structures. The cells showed the chronic degeneration forms; in fact, nearly all varieties of cell disturbance were here displayed, and active neuronophagy was in process. The neuron cells of the hippocampal areas were practically all in stages of degeneration.

(f) Fat Reactions: Free fats were not discovered in the cerebral mantle or in the cerebellum and cord, but in the hind brain segments mononuclear phagocytes in the perivascular spaces laden with fat were frequently encountered.

In the basal ganglia and internal capsule regions there was a large amount of stainable fat in phagocytes scattered through the subependymal structures and about the blood-vessels. Streaks of fat laden cells occurred between the fiber bundles of the internal capsules, but the principal amount was found among the cells of the perivascular exudate.

(g) Choroid Plexus: Nearly all blood-vessels were markedly thickened, and there was a moderate fibrous replacement of capillaries. The villi were notably atrophied and the epithelial cells were small but intact and heavily stained. Many concentric formations were noted.

(h) Spirochetes: No spirochetes were found in any of the sections stained by Jahnl's method.

Observation II.—White, male, age 45. Admitted June 22, 1922, died April 30, 1923.

Clinical Notes.—Mother and father were both dead, cause of death unknown. One sister living and well. No history of mental or nervous disease in family. Because of patient's mental condition it was impossible to obtain a satisfactory history, however, he denied any history of venereal disease, or other casualties. He used alcohol in moderation but never to intoxication.

As recorded by the medical certificate the onset of the disease occurred in March, 1922, and the symptoms noted were, that the patient appeared confused, had a poor memory and showed incoordination in his actions. On admission to Walter Reed General Hospital he remained seated in the ward the greater part of the time apparently oblivious to what was going on around him. Emotionally he appeared dull and stupid, but said that he felt happy, had no troubles and never felt better in his life, frequently smiled in a silly manner without cause. His answers to questions were free, relevant and he was anxious to cooperate. No special delusions, illusions, or hallucinations were elicited nor did he believe that he was possessed of any supernatural or unusual power. He had no insight into his condition, believed that his mind was normal and that he could think as well as he ever did. Later he became completely disoriented for time, place and person. He did not know the day, month or year, where he was or how long he had been there. He was markedly confused, being unable to locate without assistance his ward which adjoined the mess hall. He had twenty-eight years of service, but could not tell an officer's rank by his insignia at this time. He had a total loss of memory for recent events and was impaired for remote events. He was unable to give satisfactory answers to simple intel-

ligence tests, did not know when the Civil War was and was unable to mention two generals who participated in the war, was unable to name the five Great Lakes or name three European countries and their capitals. Did not remember test number after five minutes. Patient took no interest and had no knowledge of current events. When questioned, appeared bewildered and invariably answered, "I don't know." He failed to see the point of simple stories and was unable to perform the simplest calculations correctly.

On his transfer to St. Elizabeth's Hospital he had a double plus Wassermann and a paretic gold curve. On admission facial expression was mask-like. He showed some confusion and uncertainty, but was fairly neat, tidy and clean in his dress and personal appearance, mixed with other patients, cooperated willingly and assisted with any work on the ward, was good natured and his attitude was polite and respectful, seemed over-happy and elated; grandiose in some of his ideas. He never developed periods of excitement or violence or had any convulsions.

He showed the typical slurring speech of the paretic and was grandiose, claiming to be a personal friend of General Pershing having cooked for him in France. Said he used to "put it over Dempsey" and thinks he could knock him out. Had $2000 in bank but expected $6000 more for sale of property. Said he was going to marry a wealthy nurse in Chicago as soon as he could get there.

Although the patient was considered to be in the C class, on April 6, 1923, he received malarial inoculation for treatment (tertian type) for paresis. Temperature remained normal until the tenth day when he had a fever of 104 followed by convulsion on the twelfth day, successive chills on the fourteenth to sixteenth and eighteenth day, the chills being accompanied by fever and sweat. During the four remaining days no further paroxysms. Examination just previous to death showed marked speech defect, irregular sluggish pupils and unequal knee jerks. Patient died April 30, 1923. During his life as a paretic the patient had previously received 19 salvarsan intravenous injections, and nine of grey oil intramuscularly.

Necropsy Findings.—The post mortem disclosed a peritonsillar abscess, luetic aortitis, chronic diffuse nephritis, and a thyroid adenoma undergoing degeneration. The other organs including the spleen were not remarkable. Blood smears taken from the heart cavities and from the splenic pulp were positive for plasmodia.

The brain weighed 1175 grams. The surface was considerably congested (Fig. V, Plate III) and also showed a general superficial softening. All convolutions but particularly those of the frontal and parietal areas were notably atrophied. There was a mild lymphogenic exudate distributed over the frontal lobes. The pia which was thickened produced on stripping the usual decortications revealing a very granular, atrophied condition of the underlying cortex, with widened sulci and corrugated convolutions. The congested blood-vessels which were very small in caliber suggesting the dementia precox morphology showed also some general arteriosclerosis. The basal ganglia did not exhibit atrophy at the gross examination, but

the ventricles were universally slightly enlarged, and the ependyma was covered with diffuse neuroglial granulations. There was evidence of focal degenerations in the right lentiform nucleus and there was also a dropping out of fibers in the frontal white substance. The cerebellum was not grossly atrophied, and there were no tract degenerations visible in the cervical spinal cord. As a whole the brain was typically paretic.

Microscopic Examinations.—(a) Pial Edema and Infiltration: The meninges of the cerebellum and hind brain segments showed considerable sclerosis but no exudate or edematous meshes. The motor and frontal sections of the cerebral cortex showed some edema of meninges, and a typical paretic cortex and a dense meningeal leucocytic exudate and in addition many free red blood corpuscles (Fig. VI, Plate III). The other meningeal sections showed edema but no infiltration of plasma cells or lymphocytes, excepting in the depths of the fissures, however, all sections showed free hemorrhages into the meningeal meshes.

(b) Perivascular Infiltration of Lymphocytes and Plasma Cells: The hind brain segments and the cerebellum were entirely free from perivascular exudate. There was a dense perivascular and diffuse plasma cell and lymphocyte infiltration in the motor and frontal cortical areas, but in other cortical sections the exudate was slight and tended to remain in the lower cortical layers and in the white substance (Fig. VII, Plate IV). Sections from the temporal lobes showed much exudate and pigment about the vessels of the cortex and of the meninges. The hippocampi were badly damaged showing both perivascular and diffuse plasma cell reactions.

The vessels of the basal ganglia were nearly free from surrounding exudate.

(c) Adventitias—Blood-Vessel Reactions: There were numerous newly formed vessels in the white substance of the cerebellum, and the entire cerebellar structure was very hemorrhagic showing rupture of the poorly supported capillaries. In the hind brain segments there were new formation capillaries with special tendencies to perivascular extravasations. The larger marginal vessels were thickened as also were those in the region of the aqueduct of Sylvius. There were profuse perivascular hemorrhages in the inferior olives.

The cortical sections showed marked congestion and meningeal hemorrhages were a characteristic, moreover new formation vessels were numerous, and the larger cortical vessels were universally thickened.

(d) Marginal Gliosis—General Glial Cell Reactions—Ameboid Glia: There was a general sclerosis of the molecular layer of the cerebellum due to proliferation of the adventitias and to neurogliosis. This neurogliosis was also prominent in the areas of the white tracts. There was a marked neurogliosis throughout the hind brain segments, but more particularly of the pons nuclei which were quite badly damaged. There were many neuroglial productions beneath and extending through the ependyma of the aqueduct of Sylvius.

The architecture of the cortical cell layers was profoundly altered and the entire structure was very sclerotic (Fig. VIII, Plate IV). Marginal

gliosis of the entire cortex was practically demonstrated. The basal ganglia were also filled with diffusely proliferating neuroglia.

(e) Neuron Cell Changes: In the cerebellum there was notable numerical reduction in the purkinjian cells, but the remaining ones were remarkably well preserved.

Most cells of the cranial nerve nuclei were well preserved but some showed advanced pigmentary degeneration and severe cell wasting with irregular atrophies and nuclear displacements.

The neuron cells of the basal ganglia were shrunken and heavily stained, while those of the various cortical sections showed the usual paretic alterations ranging from acute changes to those of complete destruction. The spinal cord cells were apparently damaged quite severely for here was found secondary degenerations, heavy pigmentations and "foamy" reactions in the anterior horn areas.

(f) Fat Reactions: A very few globules were found in the phagocytes free in the interstitial tissues of the precentral cortex, and an occasional one was discovered in the sections from the medulla but the other brain areas were free from acute fatty alterations.

(g) Choroid Plexus: This structure was badly degenerated and cystic; the villi were small, sclerotic, with cells depleted, and the blood-vessels were greatly thickened. Numerous concentric calcareous bodies had developed (Fig. IX, Plate V).

(h) An occasional spirochete was found in the cortical layers.

Observation III.—White, male, age 29 years. Admitted November 22, 1921, died January 2, 1924.

Clinical Notes.—The patient was the last in a fraternity of six children. One sister had a "stroke of paralysis" several years ago. His childhood was normal and he became an average student, completing the grade schools; one year in an academy and three years in a Virginia military institute. He always got along well in school, enjoyed the usual boyhood games, and the company of the opposite sex. After leaving the military academy he worked on a railroad for several years doing considerable survey work until he enlisted in the army in 1912. Apparently he made a good adjustment in life but never married. He had mumps, measles, and chicken-pox in childhood, and developed gonorrhea and chancre at 15 years of age. Stated that following his chancre he had it burned off and had no further treatment until he went on sick call at Camp Lewis. He spoke at length concerning his army record and boasted that he was never arrested in civil life, or court-martialed in the army, and that his colonel called him the best man in his regiment. He was discharged from the army, 1921, on S. C. D. at Camp Lewis with the rank of master sergeant. At this time his eyes became "blood shot" and on examination of his blood it was found double plus, also positive spinal fluid (Wassermann, and paretic curve). Records made at the time of his admission at Walter Reed General Hospital on September 8, 1921, showed that he was oriented for place, but confused as to time. He denied being sick, emotionally

showed a definite lack of adequate response but was ordinarily quite cheerful and failed to appreciate his real situation. Stream of talk was retarded and did not show any delusions or hallucinations. Insight and judgment lacking. General memory poor. Knowledge of current events poor. Special memory and intelligence tests all well performed. On admission to St. Elizabeth's Hospital his stream of talk was somewhat retarded but relevant and coherent. He offered no complaint except that he was anxious to be released and wanted to know about his money and compensation. He was fairly accessible, cooperative, quiet, spoke of army record pridefully, but was not grandiose. Made no complaint about his health. On examination he was corpulent, had unsteady station, swaying markedly in Romberg position. No distinctly pathological reflexes but some decrease in all deep tendon reflexes except the patellar. Speech showed some slight slurring of letters and syllables. Pupils regular and equal but reacted sluggishly to light. There was a fine tremor of face, tongue and extended fingers. Mentally the patient was in good condition and seemed to be improved as a result of treatment with salvarsan of which he had fifteen doses reinforced with seven of grey oil. On July 26, 1923, a year after treatment with above he was inoculated with malaria at which time he was in Class B. Following the inoculations he had fifteen severe chills with a temperature of 104.8. Following this treatment patient had parole of grounds, was neat, clean, quiet and orderly, gave no trouble. Orientation fairly good, no delusions noticed but rather childish and in general showed deterioration. December 31, 1923, patient in bed, rather stupid and had several convulsive seizures, temperature 99-100, pulse rather rapid and respirations labored. January 1 he had a series of continuous convulsions (temperature 103, pulse 100, respiration 26) and died on the following day.

Autopsy Findings.—The body was moderately obese with very scanty hair development, the heart showed advanced fatty degeneration of the cardiac muscles, there was a left diffuse broncho pneumonia and a bilateral granular cystic nephritis. There were no free pigments deposited in the organs, but the spleen was moderately enlarged and showed microscopically a general hemorrhagic condition with many active germinal centers in the malpighian corpuscles (Fig. X, Plate V).

The head was large, well formed, and the skull was of normal thickness. The dura was tightly adherent both to the skull cap and to the pia mater beneath, requiring the severing of many old adhesions before removal could be accomplished. Although the brain was considerably shrunken it weighed 1460 grams. The surface showed considerable congestion (Fig. XI, Plate VI), but there was very little visible exudate in the pia, which was not notably thickened and stripped from the surface with very little decortication. The cerebral convolutions with the exception of the superior frontals were only slightly atrophied, but were characterized, rather by their content of petechial hemorrhages. The basal ganglia did not show gross atrophy, and the ventricles were normal in size, but exhibited the usual granulations to a moderate degree. The vessels in general were

diffusely thickened. Although the cerebellum was relatively large in size there was a marked atrophy of the peduncles. With the exception of atrophy, the brain as a whole appeared somewhat atypical for paresis.

Microscopic Examination.—(a) Pial Edema and Infiltration: The spinal cord meninges and nerve root sheaths showed very little plasma cell and lymphocyte infiltration, but there was a patchy dense sclerosis of these membranes, however, the meninges of the cerebellum contained more plasma cells, but these were not of universal distribution. Masses of free red blood corpuscles were scattered throughout the cerebellar pia-arachnoid.

There was practically no cellular exudate in the meninges excepting those of the temporal and hippocampal areas, where a few plasma cells and lymphocytes were noted in the meshes. The meninges as a whole were not notably edematous.

(b) Perivascular Infiltration of Plasma Cells and Lymphocytes: In the hind brain segments there was very marked congestion of all vessels, and the newly formed capillaries were unusually prominent, accompanying this was a profusion of acute perivascular hemorrhages (Fig. XII, Plate VI), some of which extended farther than the perivascular spaces. There was also a moderate perivascular accumulation of lymphocytes, but plasma cells were more rare. Perivascular exudate was neither encountered in the cerebellar layers, nor in any portion of the cerebral cortex excepting the hippocampi where a few plasma cells were seen about the smaller vessels.

(c) Adventitias—Blood-Vessel Reactions: The anterior horns of the spinal cord were remarkably hemorrhagic, in fact these structures were filled with petechial hemorrhages (Figs. XIII and XIV, Plate VII). The vessel walls were somewhat thickened. The cerebellum was very hemorrhagic with congestion, perivascular extravasations and numerous petechial hemorrhages in all layers.

The blood-vessels of the cerebral cortex were engorged with blood, and newly formed blood capillaries were numerous. There was a general moderate thickening of adventitial tissues and perivascular extravasations of blood were strikingly numerous.

(d) Marginal Gliosis—General Glial Cell Reactions—Ameboid Glia: The spinal cord showed a marked patchy marginal gliosis and the cerebellar tissues particularly the white tracts and the molecular layer exhibited a moderate increase in neuroglia.

In the cerebral cortical sections there were advanced architectural changes and a neuroglial felting, particularly about the larger blood-vessels. A marginal gliosis was also in evidence.

(e) Neuron Cell Changes: There was a partial preservation of the neuron cells in the grey matter of the cord, but many were in states of primary degeneration. A moderate amount of degeneration was also noted in the posterior sensory columns.

The nuclear cells of the hind brain segments were heavily pigmented, showing the reaction of secondary degeneration, however, many cells were

quite normal in appearance. The purkinjian cells of the cerebellum were largely pale and shrunken, but a few showed swelling and hyaline degeneration.

The neuron cells of the cerebral cortex were shrunken and in various stages of disintegration. Neuronophagy was actively established in all sections studied, and many hyaline globules were scattered through all layers.

(f) Fat Reactions: In the sections from various areas of the cortex there were small clumps of phagocytes filled with fat globules, scattered diffusely through the structures, and there were also some fatty changes in the neuron cells, but this change was not very universal, and was mild in degree. The cerebellar and spinal cord structures were free from fat but sections through the basal ganglia showed an occasional group of fat globules. The sections as a group showed advanced changes of paresis, but there was not a very abundant fat release.

(g) Choroid Plexus: Fibrous replacement of capillaries with calcification of the structures characterized these sections. A few calcareous granules were also in evidence, and the epithelial cells were extremely depleted.

(h) Spirochetes: A few damaged, apparently disintegrating spirochetes were noted in the cerebral cortex.

Observation IV.—Negro, male, age 41. Admitted September 22, 1922, died November 9, 1923.

Clinical Notes.—This patient was admitted from Walter Reed Hospital with the diagnosis of general paresis. He had a marked speech defect but this was due partly at least to a recent fracture of the jaw incurred in a fight down town while he was on parole from Walter Reed Hospital.

Family history as obtained was negative. The patient was the fourth in order of birth in a family of five children, had the usual childhood diseases, began school at ten years of age and continued until sixteen. Claimed to like school and always got along well, being usually at the head of his class. He left school to support his mother; worked as farm laborer and always got along well with all his employers. He joined the army in 1900 and progressed rapidly from private to sergeant. Was later demoted to private first class, and transferred to Walter Reed General Hospital for observation. He denied masturbation because he always had plenty of girls, his first experience occurring at 15 years of age and frequently since then both with prostitutes and also clandestinely. He claimed to have had gonorrhœa while in the army in Cuba but said he was cured and had had no recurrent attack since. Denied having lues or any sores or pimples on the penis. Had used alcohol excessively at times.

April 1, 1922, the patient became irritable, restless, and was unable to perform the duties of a soldier. Developed the habit of picking up old bottles and other pieces of junk to sell for a few cents each. Claimed he had never had any convulsions or fits and believed his memory and his ability to think were as good as they ever were. He was actively delusional and hallucinated, had grandiose ideas, was excited, talkative, boisterous, hyperactive, untidy

in general appearance and stated that corpsmen attempted to hang him in the latrine every night with a rope.

Since his admission he had been quiet and agreeable on the wards, mingling freely with other patients, talked freely and coherently and was accessible, denied both auditory and visual hallucinations and showed no evidences of poor judgment, was well oriented in personal, temporal, and special spheres, memory was fairly good, answered well in intelligence tests and calculations were correctly but slowly performed.

On examination there was no gross visual defect, pupils equal and regular but did not react to light, hearing in left ear and innervation to tongue disturbed, speech defect on test words, marked tremor of tongue, lips and fingers and knee jerks exaggerated, but coordination tests of motor system were fairly well performed. Serology was typical of paresis. He was placed in the B group.

December 13, 1922, he was injected subcutaneously in the scapular angle with 4 c. c. of blood from a patient suffering from a double tertian infection who had just had his chill; he developed temperature of 104 degrees and reacted accordingly. During the days following the injection the patient claimed to feel fine although he had a temperature of 105 and a chill every day. (13 paroxysms.) His general feeling of well being which was an outstanding symptom was sufficient to counteract the expression of any feeling of malaise. He had no insight into his condition, but was very cooperative, pleasant and agreeable about the ward.

Following the treatment the serology findings became negative whereas they had been positive preceding the treatment. The patient improved rapidly and was in good condition both mentally and physically; neat in appearance, tidy in habits, bright, alert, cheerful, adjusted well both in hospital and on the outside. Was allowed out of the hospital on parole for days and even a month at a time. A later examination revealed a slight suggestion of Romberg, pupils reacted to light but rather sluggishly, fine tremors of extended finger and facial muscles, well oriented in all fields, denied hallucinations and no delusions elicited.

On October 23, 1923, the patient complained of feeling badly and was found to be much weaker. His face had a drawn appearance and he had great difficulty in articulation, the neurological symptoms were all much more pronounced. He refused to take food, became very resistive at times and refused to keep his clothing on. General examination showed much emaciation. He insisted nothing was wrong with him and refused to remain in bed. Nervous system showed irregular pupils, sluggish reaction, knee jerks absent and Romberg signs positive. There was an increasing evidence of active pathology in the upper lobes of both lungs. The patient died November 9, 1923.

Autopsy Findings.—The lesions of interest were bilateral apical pulmonary tuberculosis, aortic relaxation and cardiac decompensation, syphilitic aortitis, secondary changes in the liver and spleen and terminal acute nephritis. The thyroid was small, pale and fibrous, being apparently inadequate

in function. The adrenals were narrow with a very thin medulla, but the cortex appeared thickened in places and increased by compensatory hypertrophies of minute dimensions.

The brain weighed 1311 grams and the dura was greatly thickened being far more so than the average paretic dura. The brain was considerably atrophied in the frontal and parietal areas and the meninges and cortex were sharply congested, but there was very little visible exudate (Fig. XV, Plate VIII) in fact there was none of the exudate usually seen in paretics, however, the mesial surfaces of the frontal lobes were adherent and the pia stripped with difficulty. The base of the brain was free from exudate, the basal ganglia were not atrophied, and the ventricles were normal in size, but there was an unusual degree of diffuse granulation present in all extensions of the ventricles and the ependyma covering the roof structures were greatly hypertrophied. The cerebellar structures shared in the acute congestion, but there was no visible atrophy of this tissue or of related structures. The spinal fluid was in moderate excess and the spinal cord showed a mild degeneration in the columns of Gall.

Microscopic Examination.—(a) Pial Edema and Infiltration: The meninges of the spinal cord were rather dense and sclerotic but were free from cellular exudate as were also the membranes covering the hind brain segments and the cerebellar pia-arachnoid.

The pia-arachnoid of the cortical sections was sclerotic and showed tendencies to endothelial proliferation with budding and in some areas was edematous, but there were no signs of lymphocytes or plasma cells. In the hippocampal sections were noted some meningeal infiltration of plasma cells deep in the fissures.

(b) Perivascular Infiltration of Lymphocytes and Plasma Cells: There was no exudate about the vessels of the spinal cord or in any other of the subcortical structures. The sub-ependymal structures were strikingly free from lymphocytes and plasma cells.

The cortical sections were entirely free from perivascular or diffuse exudate with the exception of those sections from the hippocampi in which an occasional vessel may be seen surrounded by a few plasma cells.

(c) Adventitias—Blood Vessel Reactions: There was an abundance of newly formed capillaries in all areas of the cortex and much scarring of all layers. The larger vessels were all thickened and many were surrounded by hyaline globules—hyaline degenerations were also noted in the walls. Hyaline degeneration of vessel walls was particularly marked in the arterioles of the corpus striatum, and moderately so in the cerebellum.

(d) Marginal Gliosis—General Glial Cell Reactions—Ameboid Glia: The architecture of the cortical layers was disorganized, although the sclerosis was not marked it was diffuse in distribution. The marginal gliosis was extensive in all zones. Ameboid glia were numerous throughout, but particularly in the lower cortical cell layers.

Through the midbrain and hindbrain structures including the pons there was a general increase in the neuroglia, and neuroglial granulations of the ependyma were typical but not numerous.

The neuroglial cells of the cerebellar tissues were apparently normal in reaction.

(e) Neuron Cell Changes: The parenchymatous cells of the spinal cord were in various stages of severe degeneration and those of the hind brain nuclei showed both primary and secondary degenerations, some nuclei being very badly damaged, with numerical reduction in cells, and pigmentations, granulations and vacuolization of remaining ones. Some strips of cells in the pons nuclei showed acute cloudy swelling.

In the cerebellum there was a reduction in the number of purkinjian cells and degenerative features in those present with a few showing acute hyaline reactions.

The cerebral cortical cells were in various stages of secondary degenerations. Some were extremely granular while others were small, shrunken and heavily stained. Generally speaking the changes were those usually seen in general paresis.

(f) Fat Reactions: Fatty alterations were noted in the neuron cells of nearly all of the anatomical areas of the brain studied.

Motor Area Precentral Gyrus: Architecture of this area was greatly altered, and many of the neurons particularly the Betz cells have apparently dropped out. There was very little fatty alteration generally speaking in the small pyramidal cells of the several layers although fatty changes were visible in a few. Regarding the Betz cells, the fact was here quite strikingly in evidence and was usually spread out over one-third to one-half of the cut surface.

Frontal Cortex: No free fat about the vessels but a few of the larger pyramidal cells showed fatty alterations although these were not quite so severe in appearance as those described for other brain areas. Occasionally the cortical cell was badly damaged, showing masses of fat about the nucleus in the wider part of the protoplasm.

Temporal Cortex: Description of frontal cortex answers for these sections without additional remarks, excepting an occasional capillary showed in its vicinity phagocytes containing a few fat globules.

Hippocampal Area: Most of the neuron cells showed some fatty alteration but it is rather mild in degree and affected only the margins of the protoplasm; however, there was an occasional cell in acute active degeneration.

Occipital Cortex: An occasional blood-vessel in the white tracts showed a definite deposit of fat globules near the wall. These clumps of fat seemed to be free, but it was difficult to determine whether or not they were contained in large phagocytes since there was so much distortion of the globules and of the vessel walls. Stainable fat was not seen in the adjacent neuron cells with the possible exception of a very occasional one.

Lenticular Nucleus: Typical granulations were seen along the ependyma but arrangement of fat around the subependymal vessels was not seen. No stainable fat seen in these sections.

Thalamus: Showed very striking fatty alterations in the parenchymatous cells. These were more sharply stained than in any of the other sections studied. Here entire cells were destroyed, only a clump of fat remaining. Other cells were in various degrees of degeneration, the usual reaction being a ring of fatty staining substance partly surrounding the nucleus or a semilunar area of the protoplasm being replaced by a collection of fat with the rest of the cell appearing more normal. These alterations were seen through all areas of the thalamus which have come under observation.

Hind Brain Segments: Showed active advanced fatty alterations in the deeper cells, particularly between the streaks of anterior pons fibers. Fat was here readily stained in the neuron cells which were elongated, narrow and showed complete replacement of protoplasm. Nuclei did not appear to be seriously affected with the exception of a few instances.

Cerebellum: No free fat noted in any of the layers nor in the purkinjian cells. Neither were there any phagocytes containing this substance.

Pons: A few cells in the pons nuclei showed definite finely granular fatty alterations. In a few places these cells showed a complete replacement of the protoplasm by fatty granules. In fact high power examination showed that two-thirds of the cells of the pons nuclei were in various degrees of fatty alteration. This change seemed to be universal through all of the neuron cells of the pons sections. Clumps of fat were sometimes universally distributed through the protoplasm of the cell and in other instances merely clumped to one side or the other of the nucleus. There was considerable swelling of the protoplasm. There was very little free fat around the blood-vessels or in the vicinity of the tract bundles.

Decussation Area: The neuron cells were here very severely altered. There was much replacement by active fatty degeneration. Many of the cells had entirely degenerated and were far past the fatty change state, but the remaining ones were practically all affected, and showed the margins brightly stained with red. Some cells were affected in the center of the structure including the nucleus which was affected more severely than the margins which had apparently escaped. Practically no free fat around the blood-vessels or in the meninges.

(g) Choroid Plexus: The choroid plexus was very hemorrhagic and the villi were sclerotic, the cells reduced in size and number, and heavily pigmented. The blood-vessels were thickened, calcareous, and numerous concentric formations were in evidence.

(h) Spirochetes have not been discovered in any sections of the brain tissue.

Observation V.—White, male, age 38. Admitted July 24, 1922; died September 13, 1924.

Clinical Notes.—The patient was raised on a farm by his parents. Mother died following an operation for gall stones, father, of an injury in old age. He attended school irregularly until sixteen years old, then worked in a blacksmith shop, later as a carpenter until 1911 when he entered the navy During the war was on convoy duty with rating as shipfitter, first class.

Present Illness.—Began in 1912. Patient had an ulcer on his leg and was sent to a naval hospital in the Philippines. A blood test at this time was positive for syphilis. Denied ever having had chancre, rash or other symptoms. Since 1913 he had received anti-luetic treatment with salvarsan and mercury at irregular intervals and continually since 1920. In July, 1921, while on board ship and receiving anti-luetic treatment he became unconscious, voided involuntarily and had an irrational period. At this time blood and spinal Wassermann were four plus. The acute process soon cleared but he remained "mentally retarded." Treatment was continued but there was no sign of improvement physically, mentally or in laboratory findings. Was dull, complacent, untidy and somewhat disinterested, was well satisfied, quiet and well behaved, considerably retarded and showed beginning deterioration. No definite impairment of memory, no delusions elicited, but there were tremors, increased reflexes, slight Romberg, and sluggish pupillary light reaction. Later as a result of treatment the Wassermann on blood and spinal fluid became negative but Pandy and Ross-Jones remained positive and Lange reaction typically paretic.

Since admission to St. Elizabeth's Hospital the patient was well behaved, cooperative, easily accessible, but disinterested and untidy, and appeared rather content with his surroundings, and did not take an interest in his condition, being emotionally dull. His stream of talk was retarded but relevant and coherent and a slight speech defect was noticeable. He denied ever having heard voices or having seen visions, no delusions were elicited, and he did not appear to be suspicious of his associates. The patient realized that he had syphilis but did not know why he was sent to a hospital for nervous diseases. Stated that he drank beer moderately, used tobacco, had first heterosexual experience at 17 and since then at irregular intervals with prostitutes, was oriented in all spheres, good memory for recent events but confused remote ones. At a later examination he responded well in intelligence tests, the pupillary reflexes were sluggish, knee jerks exaggerated, generalized tremor and speech defect, and dull mask-like expression.

The patient had seven treatments with tryparsamid beginning July 6, 1923. On August 29 he had a temperature of 103 which remained up until his death September 13, 1923. He had no convulsions but was deeply stuporous at times.

Necropsy Findings.—Permission was granted for brain examination only, and the brain was obtained after the body had already been embalmed so that the tissues had been injected with the usual combination of formalin and carbolic acid.

The brain weighed 1435 grams, the pia was opaque, milky and tightly adherent to the cortex, and there were small hemorrhages in the meshes (Fig. XVI, Plate VIII). The cortex showed universal atrophy which was particularly marked in the frontal and parietal cortex and through the islands. The basal ganglia also shared this atrophy to a marked degree and the lateral ventricles were irregularly dilated. The ependyma was

not granular throughout, but this process was in evidence about the foramen of Monroe and in the fourth ventricle. The cerebellum was atrophied, as was also the pons structure. The post olfactory surfaces were bathed in a thick, adherent, stringy exudate.

Microscopic Examination.—(a) Pial Edema and Infiltration: There was some edema but no exudate in the meninges of the hind brain segments, but the pia-arachnoid of the cerebellum showed the usual fibroblastic reaction and plasma cell infiltration seen in the paretic. While there was a moderate lymphocyte and plasma cell infiltration of the cortical meninges, there was far less of this reaction than in the average case of untreated paresis. The pia as a whole was quite edematous.

(b) Perivascular Infiltration of Lymphocytes and Plasma Cells: In the hind brain there was a scanty collection of plasma cells and lymphocytes about some of the larger vessels but practically none about the smaller ones. The tissues of the cerebellum and of the basal ganglia were free from perivascular exudate.

All sections of the cerebral cortex were free from perivascular cell reactions, with the exceptions of the hippocampi where a few plasma cells were seen in the perivascular spaces.

(c) Adventitias—Blood Vessel Reactions: The cerebral cortex showed moderate disorganization and the blood-vessels were numerous from newly formed capillaries. Most of the larger vessels showed considerable thickening in all sections of the cortex. In the other brain areas adventitial changes were not remarkable.

(d) Marginal Gliosis—General Glial Cell Reactions—Ameboid Glia: Neuroglia cells were increased rather markedly through the entire cervical cord substance, and the motor plate of the hind brain showed patches of dense neurogliosis. In addition the subependymal structures were filled with neuroglia and numerous granulations were distributed along the ependymal surfaces (Fig. XVII, Plate IX). There was considerable neurogliosis of the molecular layer of the cerebellum and also an unusually dense overgrowth through the white substance. Many of the leaflets were densely sclerotic at the tips.

In the cerebral cortex the neuroglia cells were just as numerous as in the average case of paresis, thus was produced considerable sclerosis and felting of the various layers. There was also marked neurogliosis of the white matter, where scattered among the neuroglia cells were a few lymphocytes and plasma cells.

(e) Neuron Cell Changes: The neuron cells of the gray substance of the spinal cord showed considerable damage with irregularities in staining reactions of protoplasm, eccentricities of the nuclei and poor preservation of the Nissl bodies, there being a tendency to fragmentation.

The cells of the hind brain nuclei including the olives were shrunken and exhibited tendencies to marginal distribution of chromatin. Various stages of secondary degeneration were seen.

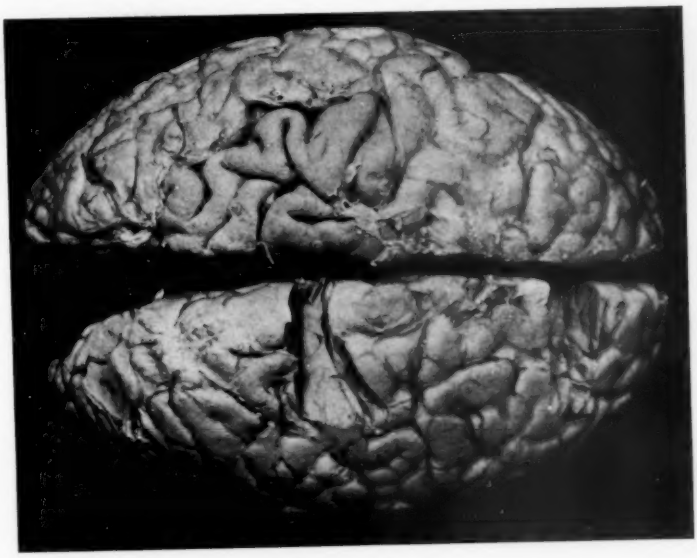


FIG. I.—Photograph of brain from Observation I, showing mild, diffuse cortical atrophy and opacity of the pia mater.

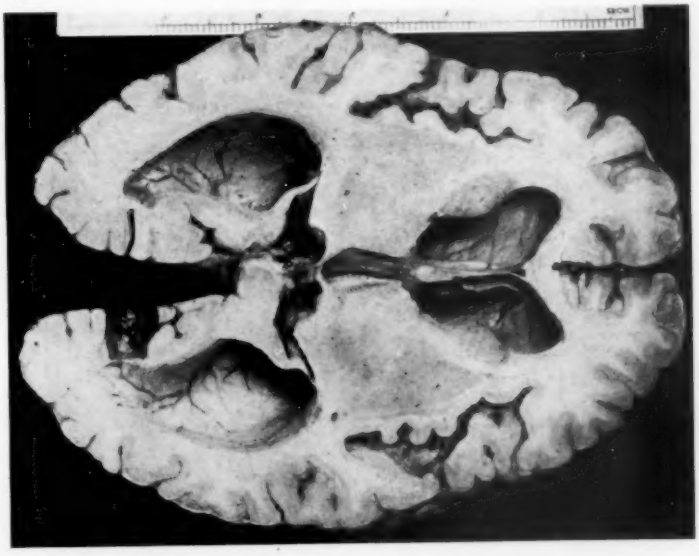


FIG. II.—Photograph of horizontal section of brain from Observation I, showing dilated ventricles and atrophy of opercula and insular cortex.

FIG. III.—Photomicrograph of edematous cerebral pia-arachnoid from Observation I. A few lymphocytes and plasma cells are present in the meshes.

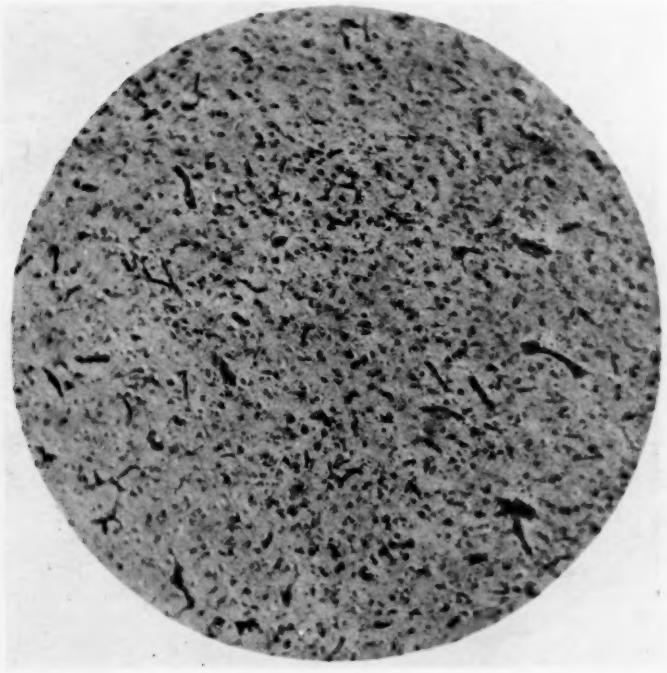


FIG. IV.—Photomicrograph (L. P.) showing density of cortex and mild perivascular cellular exudate (Observation I).

FIG. V.—Photograph of brain from Observation II showing considerable congestion and a mild lymphogenic pial exudate.

FIG. VI.—Observation II—Photomicrograph showing pia-arachnoid infiltrated with lymphocytes and red blood globules.

FIG. VII.—Photomicrograph of lower cortical layer and white substance (Observation II). Note infiltration of lymphocytes about vessels.

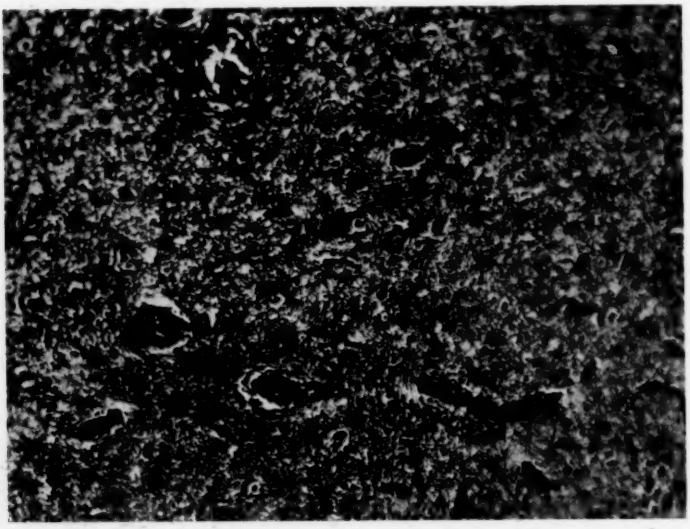


FIG. VIII.—Photomicrograph (Campbell's Stain) of Cortical neuroglial felting in Observation II. Note density of neuroglia fibres about the blood vessels.

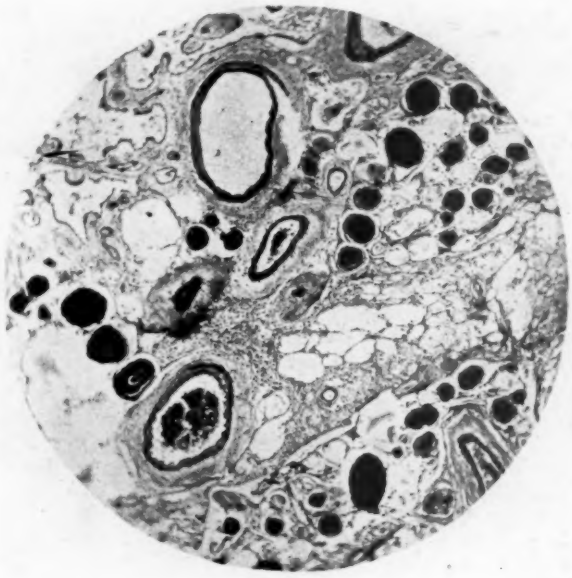


FIG. IX.—Photomicrograph of section of choroid plexus in Observation II, showing thickening of blood vessels and the numerous concentric bodies.

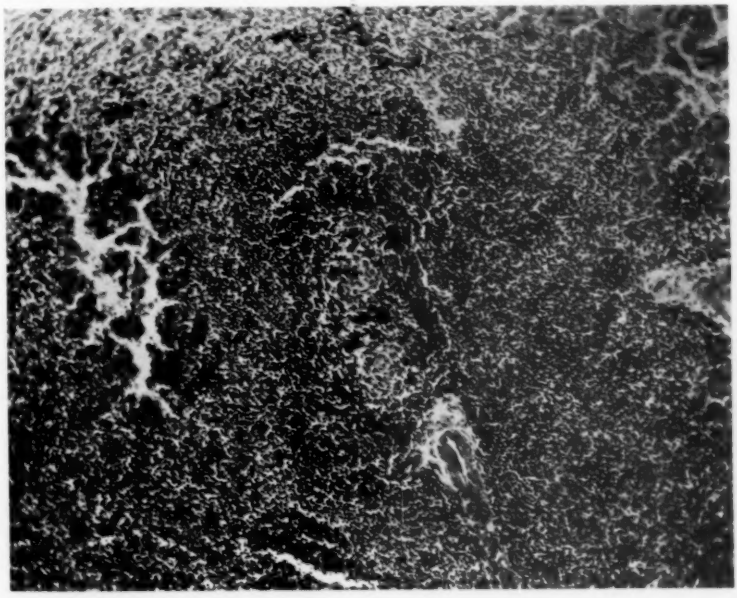


FIG. X.—Photomicrograph of spleen in Observation III showing reactivation of germinal centers in malpighian corpuscles.

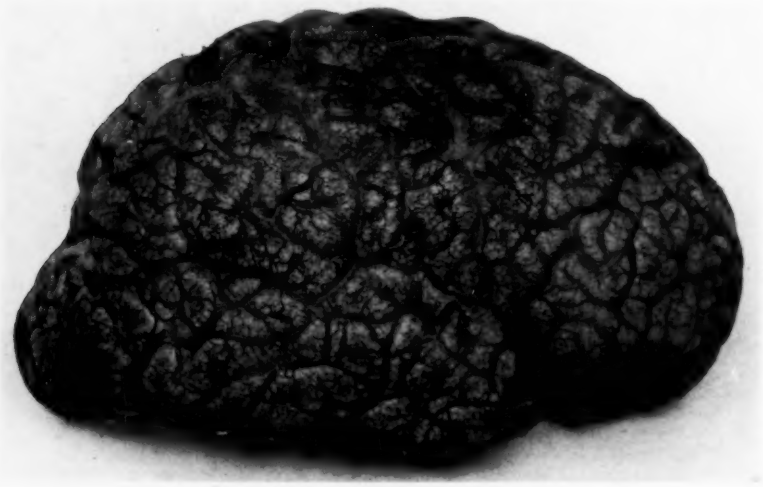


FIG. XI.—Photograph of brain in Observation III, showing marked congestion and surface blood extravasations.

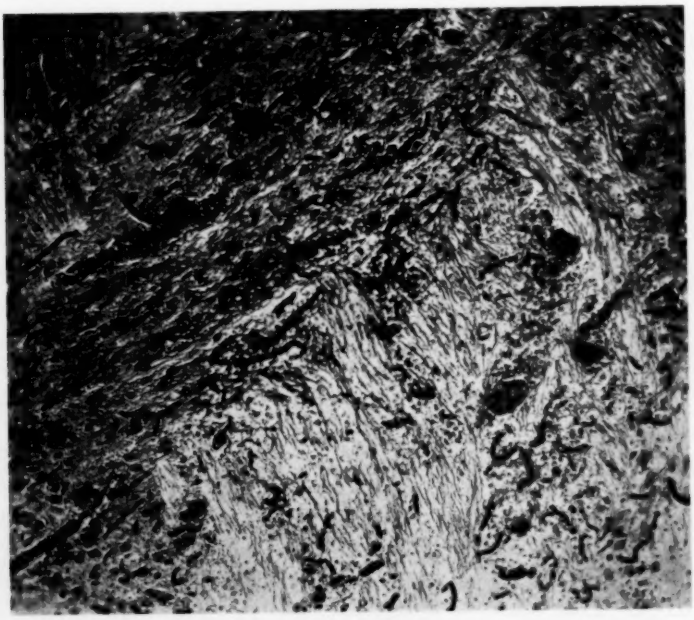


FIG. XII.—Photomicrograph of pons in Observation III, showing congested capillaries and free red blood globules.

FIG. XIII.—Photomicrograph of anterior horn of cervical cord in Observation III. Note numerous petechial hemorrhages.

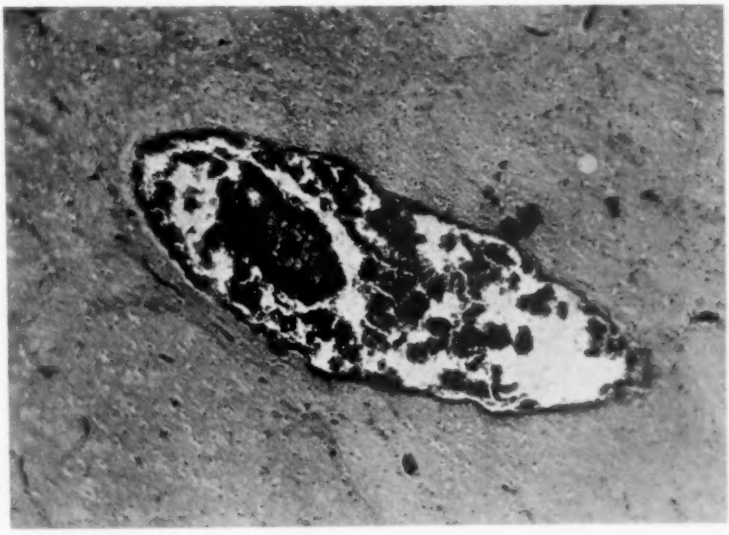


FIG. XIV.—Photomicrograph of ruptured blood vessel, characteristic of nearly all brain sections of Observation III.

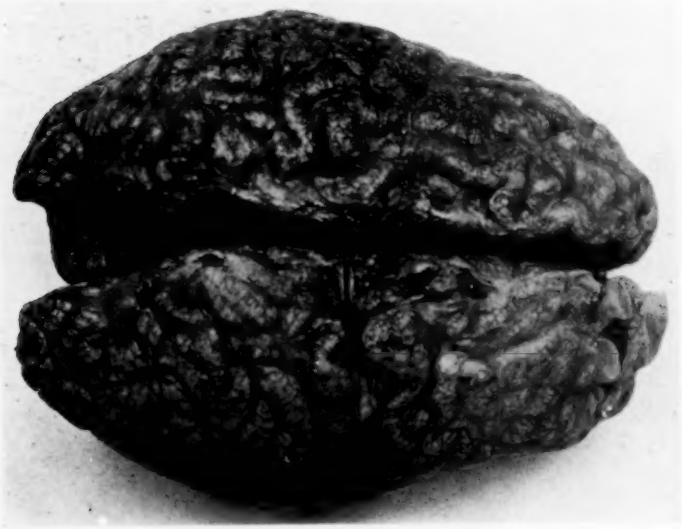


FIG. XV.—Photograph of brain in Observation IV, showing marked congestion and general atrophy.

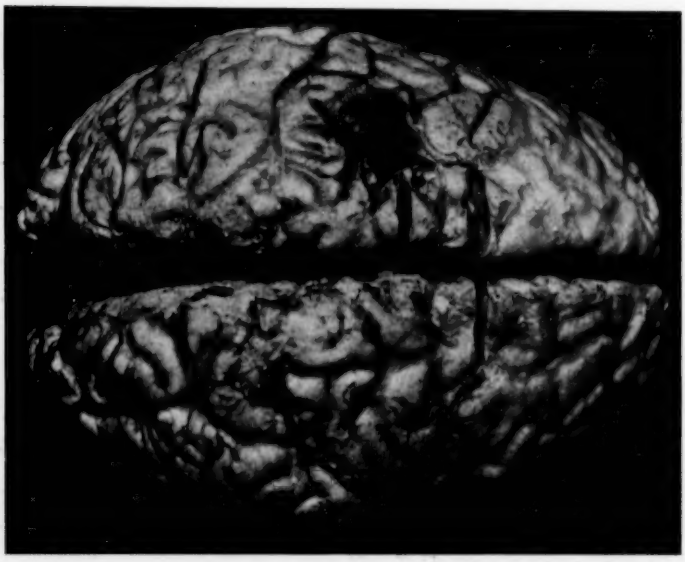


FIG. XVI.—Photograph of brain from Observation V, showing opaque milky pia, and focal blood diffusion.

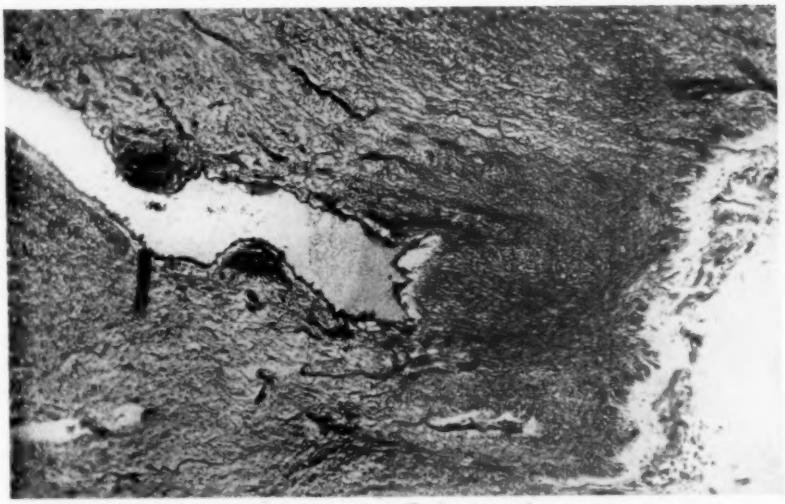


FIG. XVII.—Photomicrograph of hind brain segment in Observation V. Note neuroglial bridging beneath ependyma, and also neuroglial granulations along the ependyma.

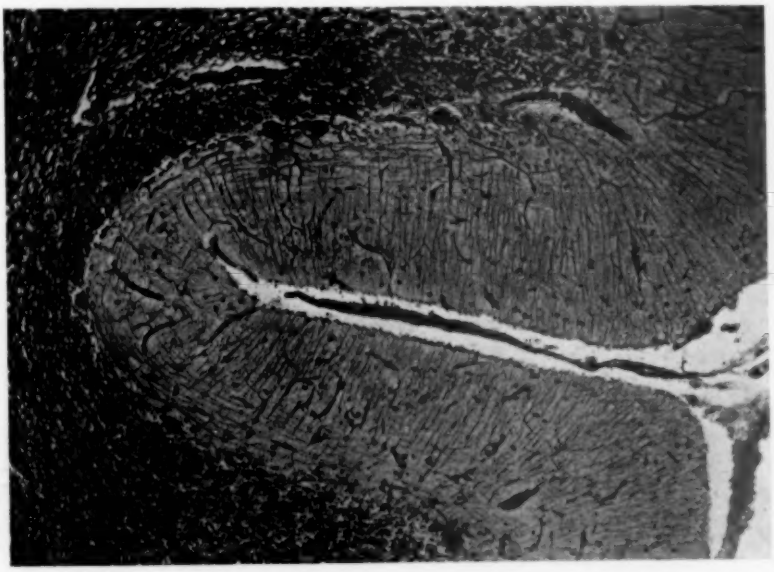


FIG. XVIII.—Photomicrograph (Campbell's stain) of cerebellar cortex in Observation V, showing marked numerical reduction in the purkinjian cells.

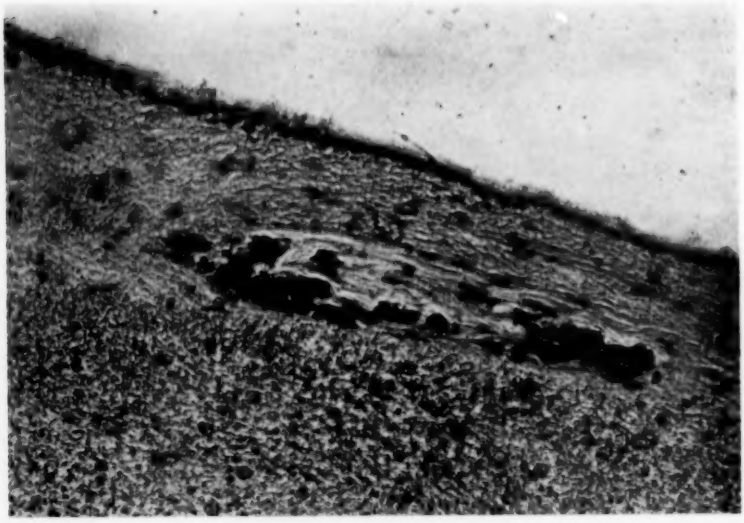


FIG. XIX.—Photomicrograph (Scharlach-R-Hirxheimers stain) of sub-ependymal tissue of thalamus in Observation V, showing fat in vessel walls and in perivascular space.

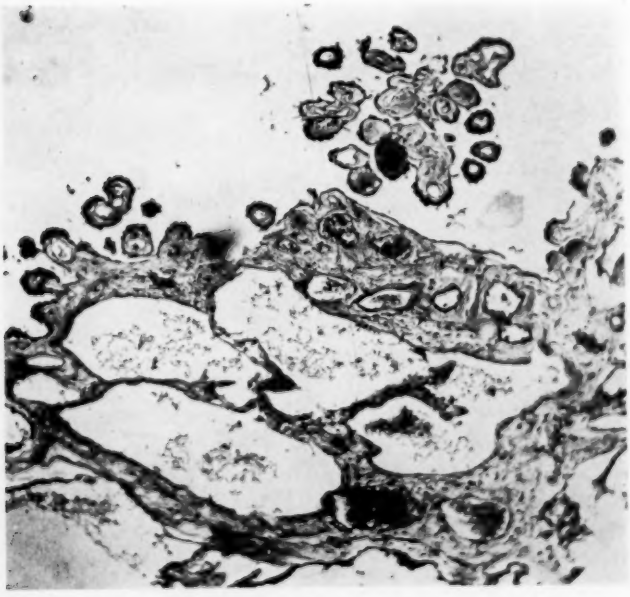


FIG. XX.—Photomicrograph of choroid plexus in Observation V, showing marked fibrosis and tremendous loss of cells.

The cerebellar purkinjian cells were numerically reduced (Fig. XVIII, Plate IX) and showed degenerations. There were a few binucleated purkinjian cells, and an occasional one displaced far into the granular layer; these displaced cells were very small and undeveloped in type.

In the cerebral cortex there was considerable disorganization edema and loss of polarity in the cell layers; the neuron cells were very irregularly stained, the nuclei indistinct and frequently contracted and neuronophagy was actively established. In some areas the cells were locally pale and shrunken or densely pigmented.

(f) Fat Reactions: Motor and Frontal Cortex: Showed practically no fatty substances visible in any of the areas studied.

Temporal Cortex: There was some free fat around the blood-vessels in certain areas of these sections of cortex. In other areas it appeared to be quite absent. A few of the pyramidal cells showed fatty alterations but the greater number were entirely free from stainable fatty substance.

Thalamus: The sections of the thalamus and lenticular nucleus showed an intact ependyma, but immediately beneath the ependyma were blood-vessels surrounding which were very definite accumulations of brightly stained globules of fat (Fig. XIX, Plate X). Some of these were in the vessel walls themselves. A few of the thalamic cells showed fatty alterations but this change was a very mild one as compared with some of the other sections of this brain. Some of the small capillaries presented an occasional fat globule. In some of the large thin-walled dilated vessels fatty alterations were seen within the walls. The amount of fat deposit around the vessels was considerable and was contained within phagocytic cells. It seemed to be far out of proportion to the amount of local degeneration in the parenchymatous cells.

Anterior Hind Brain Segment: Very few fatty alterations either in the cells or about the vessels were herein noted, however, there was an occasional area showing a few globules of free fat near the blood-vessels. There were no active cellular disintegrations either from the standpoint of fat or nuclear alteration in any of the motor nerve nuclei. There were very few phagocytes seen in these sections which perhaps may be accounted for by the reason that there was so little fatty alteration, the exudate was very mild.

Post Hind Brain Segment: There was very little evidence through the tissue of active fatty degeneration in the neuron cells although a few of them showed finely diffuse production of very small fat globules. The motor nuclei of the cranial nerves showed an occasional cell containing a few fatty globules usually situated immediately right or left to the cell nucleus. There was no free fat in the perivascular spaces or in the interstices of the tissue itself.

Cerebellum: Showed no fatty alterations.

(g) Choroid Plexus: There was marked fibrosis of all sections examined with increased connective tissues, thickened blood-vessels, irregular thickened distorted villi showing tremendous loss of cells (Fig. XX, Plate X),

and a moderate number of calcareous granules. In some areas the epithelial cells were shrunken and linear, in others they were proliferating in bud-like projections.

(h) Spirochetes could not be positively identified in any of the sections studied.

Comments and Conclusions.

1. A survey of the history of treatment in paretic neurosyphilis reveals the fact that, generally speaking, the results have been somewhat disappointing, and up to the present very little can be added to the prognostic remarks made by Mickle in 1886 before paresis was known to be a form of syphilis.

2. In our review of a portion of the literature we laid special emphasis on the early methods of treatment, and particularly how some of them, in a way, anticipated the recent attacks by the production of induced fevers. The hopeful results secured by the exponents of the acute fever methods have been reviewed rather extensively, and these reports reveal an enthusiasm which we hope will be justified by further experience with this type of approach.

3. Some interesting statistics concerning both white and colored paretics admitted to St. Elizabeth's Hospital during the past 40 years have been arranged, and the fact that 1198 patients of 1558 admissions have died of the disease while still in the same hospital is ample testimony as to the outcome expected, regardless of treatment.

4. Concerning the group of paretic patients selected at St. Elizabeth's Hospital for malarial treatment the following remarks may be offered. Sixty-eight cases were originally selected, nine of these failed to develop malaria and eight more were not available at the time of thorough re-examination of results, thus 51 cases remained for final consideration. Of these 16 were complete remissions (31 per cent).

These expressions of the results are to be considered very hopeful since a critical attitude toward them has been maintained throughout, and they do not depend upon the opinions of a single observer.

5. Four treated cases came to autopsy, and we have attempted to summarize the pathology as found therein. Few comments have been made in the text relative to the classical neuropathology of general paresis since the character of these lesions is well known or can be found in the appended references.[27, 28, 54, 60, 61, 62, 68]

While the cases studied microscopically, obviously represent the failures, they serve to emphasize the necessity of treating the cases as early as possible in the disease before the permanent damage has been done to the brain structures. This permanent change is indicated among other signs by the atrophied, sclerotic, disordered cortical architecture, the disintegration of neuron cells, dense neurogliosis, and in adventitial reactions. However, there are indications that some types of treatment including the malarial tend to reduce the exudate since in these brains there was apparent reduction in the plasma cell and lymphocyte infiltration of both meninges and perivascular spaces, certainly these brains exhibited far less exudate at termination than the average paretic.

There was a marked tendency to capillary hemorrhages and thromboses through the brains of those who died early in the experiment, this reaction in the newly formed capillaries of paretic brains may account for the untoward results and production of neurologic symptoms which may be transitory as reported by some of the European workers who have used the malarial treatment.

6. In two of these brains spirochetes were not found, but in the other two, a few apparently damaged ones were demonstrated. It is obvious that any "cure" or permanent remission in paresis must depend upon the total destruction of spirochetes in the brain tissues, and various theories have been offered to support the fever methods of treatment. Franck [4] believes that the species of spirochetes invading the central nervous system confers upon it increased resistance against therapeutic action, but after fever inducing treatment the opportunities are better for destroying the spirochete. Wagner-Jauregg endorses the theory that acute infections weaken the hemato-encephalic barrier, thus allowing the passage of therapeutic substances from the blood to the surrounding brain tissues. He believes that this barrier is made more impermeable by arsenical, alcoholic or other drug intoxications.

A recent communication from a district in China [5] is of interest in this connection. It is stated that 90 per cent of the 3,000,000 people of Hainan harbor have attacks of malaria during the course of a year, and that probably all carry the parasites in their systems. Also syphilis in the primary, secondary and tertiary forms is one of the commonest diseases (affecting from 50 to 60 per cent of the

population), but the symptoms of neurosyphilis are rarely encountered, and the author during an eight years' residence has not seen a case of general paresis, and has seen only two or three cases of tabes. Does this practically universal infection (active and latent forms) with malaria prevent the spirochete from invading the tissues of the central nervous system? At least such striking observations deserve careful investigation as to the causes for such deviations from the usual, and should cast valuable light upon this difficult subject.

One way in which the influence of malaria upon general paresis may be exerted is through the effect of intermittent waves or shocks of high temperature upon the spirochete, which type of fever may be more efficacious than a continuous temperature, to which the organisms might have a better chance to adjust, or, as others believe, that following an inoculation there is a great impoverishment of the blood followed by active and rapid regeneration processes leading to reactivation of immunity mechanisms.

7. According to the Wagner-Jauregg clinic the histological changes in cases dying in remission after malarial treatment resembled the "stationary paralysis of Alzheimer" with almost complete absence of the usually found progressive picture. (Compare with Observation IV.)

In the recent report of Jossmann and Steenarts[**] it was mentioned that seven brains from malarial treated patients had been given to Professor Bielschosky for study and that he had made a preliminary report to the effect that no spirochetes had been discovered in these brains; however, regressive changes were not observed since an insufficient length of time had transpired since the inoculations.

8. A notable improvement in the lymphogenic cell reactions had taken place in the brain structures in one patient who died after tryparsamid treatment although there was no regression in the usual chronic picture of paresis.

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DISCUSSION.

DR. SOLOMON (opening discussion of Dr. Lewis's paper).—*Mr. Chairman, ladies and gentlemen:* The most interesting thing to my mind about Dr. Lewis's presentation is his statement that he has obtained what he considers a good remission in 30 per cent of his cases of paresis, including well-advanced cases. Weygandt has reported remissions in 79 per cent in a series of 200 cases, but states that in most instances there was little change in the spinal fluid. I understood Dr. Lewis to say that he obtained changes toward a normal fluid in 16 of his cases. I would like him to emphasize this if I understood him correctly. In speaking of other methods of treatment, Dr. Lewis reports that no satisfactory clinical results were obtained. Our own experience has been somewhat different in that we have got some fair results. In a series of 220 cases we find clinical improvement in over 100 cases, nearly 50 per cent, and in 10 per cent remissions that have lasted over five years.

It would seem from Dr. Lewis's report and from the literature on the subject that malarial treatment does benefit the paretic process. Just what happens is of considerable interest. The paretic process tends to have a chronic type of pathology and it would seem that the malarial treatment with its tendency to hemorrhages into the brain and meninges should do a great deal to enliven the process and in this way lead to the possibility of improvement. In cases which Dr. Taft and I reported upon, that had been treated with arsphenamin, there was some evidence that just this had

occurred. That is, the process had become less chronic in type. The same is probably accomplished by the subarachnoid injections.

I assume that in Dr. Lewis's experience some of the satisfactory results occurred in patients who seemed far advanced and were even better than in some of the cases that seemed to be of early and of mild variety. In studying the morbid anatomy in cases of paresis, it is apparent that some cases which clinically seem very acute or very mild, show very marked histopathological changes and on the other hand, cases which are quite long standing and die in the terminal stage of the disease may show very little in the way of pathological changes. In other words, the clinical picture does not always give us a clew as to the actual changes in the brain. Further, the serology is not always easy to interpret. Thus, we have seen patients who during life showed a high pleocytosis, leading to the assumption that they had a considerable degree of meningitis, at autopsy show almost no meningitis; and on the other hand patients whose spinal fluid showed a normal cell count after treatment who have very marked meningitis when examined pathologically.

Finally, I would like to compliment Dr. Lewis on his very interesting work and his concise presentation.

Dr. Meyer.—I regret to say I have had no personal experience with malaria treatment in paresis, partly because most of our patients have been the subject of tryparsamid studies, and partly because Baltimore has no anopheles, and because we are more interested in other types of diseases. I have, however, seen the material of the Vienna Clinic and the report that Dr. Lewis has been able to give. It seems to me a very valuable and interesting addition to the reports already made.

As things stand, we must admit that it is decidedly worthwhile giving this method its best experimental opportunity, but we must always remember that other methods have been very satisfactory also. Moreover, the fact may be recalled that some other forms of recurrent febrile disease are not quite as easily transferred accidentally. Thus the Munich Clinic works preferably with the recurrens fever.

Dr. G. H. Kirby.—During the past year at the New York State Psychiatric Institute Dr. Bunker of our staff has devoted considerable time to the malarial treatment of cases of paresis. The number of cases treated so far totals about 35. While most of our cases have been under observation a relatively short period, we have, however, been very much encouraged by the clinical results which have been obtained. In such a problem as the one under discussion it is very desirable to have some control material, especially if one attempts to make comparisons as to the value of different modes of treatment. Fortunately, a careful study was recently made by Dr. Raynor of the Manhattan State Hospital staff as to the frequency of spontaneous remissions in cases of paresis. A series of 1000 consecutive cases of paresis was investigated, covering a period during which no effort was made to give anti-syphilitic treatment. It was found that in this large

series of untreated cases of paresis just 3.5 per cent of the entire number had spontaneous remissions of varying periods, but sufficiently long for them to leave the hospital and to resume their usual occupations. You will recall that one finds in the literature various statements as to the frequency of spontaneous remissions in paresis, the figures given by different observers ranging from one to ten per cent or even higher. In another series of 500 cases treated intensively by the use of neo-arsphenamin intravenously by Dr. Furman of the Manhattan State Hospital, it was found that fairly definite remissions occurred in 4.2 per cent of the entire number. Contrasting these results with our malarial series, we find that in the latter we have obtained a much larger ratio of remissions than in any other mode of treatment so far used. While the time which has elapsed is as yet relatively short, being less than a year since we began this mode of treatment, still it can be said that in 40 per cent of our cases a pronounced clinical improvement has been observed.

Dr. Lewis, if I understood him correctly, stated that the improvement in his cases included the disappearance of mental and physical symptoms and a reduction of the serological findings to normal. We cannot confirm this observation; in fact, we found that in very few cases were the physical signs affected. It is true that in some the speech defect became less marked and the gait showed improvement, but we did not find in any case any noticeable change in reflexes or disappearance of abnormal pupillary reactions. In 75 per cent of our cases there was serological improvement, but in only one case were we able to get a completely negative Wassermann in the spinal fluid. With the exception of this case we always still obtained, with the lower dilutions (1 c. c. spinal fluid), a positive Wassermann as 2 or 3 plus. The Gold Sol seems to be, of all the reactions, the one most difficult to favorably influence.

We did not find that the serological improvement and mental improvement coincided. In some cases we noted a very marked serological improvement, whereas no corresponding mental improvement occurred. On the other hand, we have noted a marked mental improvement in some cases with only a slight or moderate change in the serological picture. One observation which we think is rather important is that in most cases there occurred following malarial treatment a pronounced gain of weight. Including all patients treated, we found an average gain of 20 pounds per patient at the end of 3 months.

One of the most interesting features brought out in Dr. Lewis's report is the apparent diminution of the inflammatory process in the brains of the cases treated. We have as yet had only two of the malarial cases come to autopsy. However, the examination of the cortex indicated to Dr. Dunlap who studied the sections that the inflammatory process was present in a mild form. Further study of a large number of brains will, we feel, be necessary before we can come to a definite conclusion about the influence of the malarial treatment of the brain process.

DR. PATTEN.—In this connection I would like to report the case of a woman who contracted syphilis some 15 years ago and on examination nine years ago showed a positive serology in blood and spinal fluid and the clinical evidences of tabes. She was given mixed treatment for a year and I think she received one or two doses of salvarsan. Because of financial conditions she interrupted her treatment and was not seen again until six months ago. In the intervening time she apparently had contracted malaria for about once a month she had recurrent chills which were controlled only by large doses of quinine.

Examination six months ago showed a negative serology throughout but clinically she showed all the evidences of tabes. She has been given neo-arsphenamin at stated intervals and since then she has had no more chills.

This case raises the question whether malarial infection when used as a means of treating syphilis should not be continued longer than in the reported cases in the literature. Furthermore, malarial infection in neurosyphilis raises in my mind a doubt concerning any specific anti-syphilitic therapeutic agent. Every year brings forth new methods of treatment, the employment of new chemical preparations, and all of them with apparently an equal amount of success. I am nearly convinced that our success in the treatment of this disease is mainly due to foreign protein reaction or some other biochemical phenomenon brought about through the agent of the chemical or invading bacteria. It seems not only possible but probable that all of these agents produce some type of a reaction in the tissue cells which is inimical to the spirocheta pallidum, and that the drug or chemical in question has no direct germicidal effect.

I believe that in the future we should consider all therapy and particularly that of neurosyphilis from the standpoint of physiochemical reaction rather than specificity of germicidal properties of drugs or chemicals.

DR. GROENEVELD.—The very interesting paper of Dr. Lewis recalls me to a recent report of Prof. K. H. Bouman (Amsterdam) on malarial treatment of general paralysis and the undoubtedly suggestive results in certain cases. No reason beyond the malarial factor could be pointed out, accounting for the improvement of the patient's condition.

Moreover as to the question whether improvement in diagnostic technique could bring the patients to the hospitals in an earlier and more curable stage, it must be emphasized also that comparisons were made just before and after the time the malarial treatment has been introduced in the clinic. So the factor of improvement in diagnostic technique could practically be neglected.

DR. RAEDER.—I was at Professor Wagner-von-Jauregg's clinic somewhat over a year ago and heard his reports on his first series of nine cases. I do not recall the degree of serological improvement in this first lot but he did claim to have gotten absolute cures. At that time his series of nine cases extended over five years. His second series of 27, as I recall, showed better results, but he said it was too soon then to say much about them

One question I want to ask Dr. Lewis in regard to the case he showed us in which there was a reaction following tryparsamid injection: How he explained the polymorphonuclear exudate. I wondered if there might not have been some other factor in that particular case to account for it.

DR. LEWIS (closing discussion).—I have mentioned a few points requiring some qualification regarding the results, physical, mental and serological. As I stated before these 68 cases were selected as they entered the hospital and put in A, B, and C groups. At the end of the treatment, A, B, and C groups contained quite a different arrangement of names. As Dr. Kirby emphasized a great many of the worst cases were alleviated and some rather early so they went into the A group of results. We too had several cases in which the improvement was limited to special features, but we placed them in the more static groups for the purpose of facilitating the presentation. The four members of our paretic board will some time probably give a more complete report from the clinical standpoint. In these 16 cases the symptoms were so alleviated I doubt if any of you would have made the diagnosis of paresis. I doubt very much from a serological, physical or mental standpoint, such a diagnosis would be made. When I say serology became negative, I mean that the Wassermann and other reactions in the blood and spinal fluid became inactive or perhaps one might, in some instances, term the reactions very atypical. There are some changes still demonstrable in the spinal fluids, which I presume indicate that the patients will some time die of general paresis, but I think as has been suggested, we have something here worth further experimentation to see what will happen.

I, too, tried to check up the number of remissions with and without treatment and found great difficulty in doing so because so many of the patients had been transferred and the records were somewhat inadequate, so it was given up as a bad job.

The gain in weight mentioned, we have also noted and that is quite interesting and important when you get parallel improvement in mental and physical spheres.

The tryparsamid brain reaction, I look upon as an exaggeration of the irritation. I think the general impression one gets is that it stimulates the tissues to over activity instead of being directly a parasiticide and I think here the treatment may be a little over done in some cases in that the patient's tissues are not quite as strong, break down easily and the reaction is poor, and that the leucocytosis produced was an irritative one. This is something like the sterile leucocytosis one gets when turpentine is injected into the tissues only not so intensive.

I think perhaps that is all I care to say except that apparently this sort of attack has started a good many other methods of approach, based on induced fever reactions.

Perhaps the reading of my complete article will suggest an answer to many other questions which have arisen during the present discussion.

ON THE SIGNIFICANCE OF CERTAIN NERVE CELL CHANGES, PROBABLY TOXIC, IN RELATION TO CLINICAL DIAGNOSIS.*

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In 1872 Dr. John P. Gray established the first American State Hospital Laboratory at the Utica, N. Y., Asylum and in succeeding years presented before this Association illustrations of microscopic pathology of the cerebral cortex in insanity. Ever since then the succession of papers of this type, particularly in relation to the psychoses of as yet undetermined etiology has been characterized by contradictory findings and interpretations until it has been said that no two pathologists can be found to agree on the significance of lesions, the one attributing them to specific disease processes, another to complicating diseases, still another to known or unknown elements in the fixation of tissues or in the technique of preparation for microscopic study. Such difference of opinion and frequent apparently contradictory findings were not absent in the early discussion of the pathology of psychoses which we now recognize without dissent to have a definite pathology, and for some of which the cause is now known. Of these, of course, the best example is still general paresis. Therefore, we may hope that the publication of different points of view about microscopic pathology may still not be useless in leading to a better knowledge of the nature of the psychoses.

The illustrations are micro-photographs of cells from the cerebral cortex, one taken from a case of uremia in a man thirty-nine years old, another taken from the case of a man, who, for about thirty years, had been a patient at Danvers, whose diagnosis was thought to be either dementia præcox or chronic alcoholic hallucinosis, and who, at any rate, had suffered from auditory hallucinations as the most characteristic symptom of his psychosis, but who eventually died in coma from pyonephrosis, following cystitis and ureteral obstruction from three large stones in the bladder. Most

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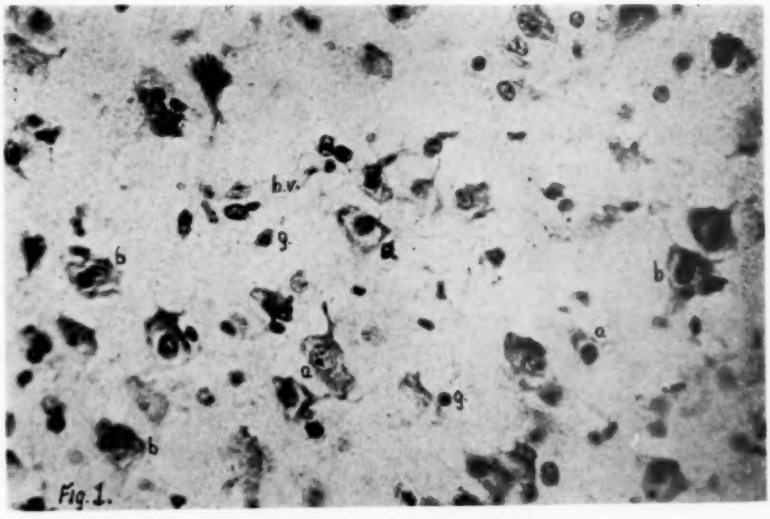
of the cells in these illustrations present the following appearance: The cell body is rounded in outline and its processes not prominent; the nucleus may or may not be slightly swollen or irregular; around the nucleus is a pale, unstained area of varying size, and at the periphery is a finely granular type of cytoplasm. Sometimes there appear to be shreds of cytoplasm reaching from the periphery of the cell body to the nucleus around which also either may or may not be seen, inside the clear peri-nuclear space, a thin layer of cytoplasm. No Nissl bodies are to be seen in these cells. In many of them there are seen distinctly inside the cytoplasm of the ganglion cell well-preserved neuroglia cells of which only the nuclei are usually stained by toluidin blue with which the photographed sections were stained. In the photograph from the case of dementia præcox or alcoholic hallucinosis in which death was due to pyonephrosis, there can be seen also cells, small, shrunken, deeply stained (the appearance described by Alzheimer[1] as "sclerosis" of the nerve cell), which presumably are indicative of an older degeneration and which are practically always found in the brain of the chronic degenerative psychoses.

My attention was first attracted to this condition of the nerve cell when, in the effort to obtain some more or less accurate answer for a question frequently asked me, namely, as to what I found in the brain in cases of manic depressive insanity, I looked more or less carefully over the sections from the brains of such cases and found this peculiar swelling and rarefication of the cell sometimes with neuronophagia in some cases with that diagnosis which had come to autopsy. (Abstracts Nos. VI, VII, XVI appended.) It was shortly after this that I learned that Sir Frederick Mott[2] had described the same condition in the nerve cells in his work on dementia præcox, and a year ago at our meeting in Detroit, Dr. Dunlap[3] of New York showed an illustration of it from one of Dr. Mott's cases and two illustrations of the same condition which he found in his controls, one from the brain of a bootlegger who had been shot through the lungs, and one from the brain of a girl whose head had been cut off by accident. Dr. Dunlap thought it due to some factor in the preparation of the tissues, but the value of his controls was questioned at the meeting last year because of the absence of previous history concerning them; so the compatibility of this condition with normal brain remained questionable.



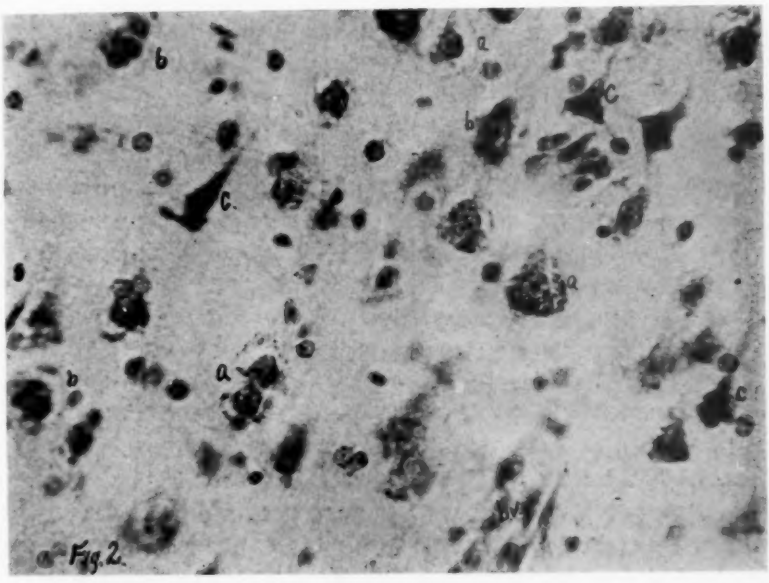


FIG. 1.—Cells from cortex; uremia.

FIG. 2.—Cells from cortex. Long standing psychosis (dementia præcox or alcoholic hallucinosis) with death from pyonephrosis.

a. Swollen, rounded nerve cells with granular cytoplasm at periphery and clear perinuclear space.

b. Similar nerve cells with neuronophagia.

c. Sclerosed nerve cells.

b. v. Blood vessel.

g. Glia cells.

Photographs of celloidin embedded sections stained with toluidin blue. Zeiss No. 2 Ocular; 4 mm. objective.

In the examination of some slides one finds practically all the nerve cells in the supra-stellate layer of the cortex, and sometimes in the infra-stellate layer also, presenting this condition. It seemed, therefore, that it would be worth while to discover, if possible, the cause of it. Two things seem to militate against the idea that it is due to any factor known or unknown in the technique of preparation. In the first place it is not reasonable to suppose that neuroglia cells or other wandering or phagocytic cells enter the body of the nerve cell during fixation or even between death and autopsy. It is conceivable, however, that the swelling might occur after death, and that the time which elapses between death and fixation of tissues influences the process. When, however, it was found that in the same brain, sections from some cortical areas, especially the hippocampal and occipital, were practically free from this change, while other sections, particularly the frontal, presented it in almost all the cells, all the sections having been removed from the brain and placed in the same fixative at the same time and embedded, sectioned and stained at the same time, the probability of its being due to factors in the technique of preparation seemed to be remote. I then looked over the slides from 114 autopsies to find in what particular types of cases it occurred.

We have been unable to find any published illustrations of this condition other than those of Dr. Mott and Dr. Dunlap, and have come to consider it tentatively as an indication of the action of some toxin or retained metabolic product on the nerve cells and this for the following reasons. It was found at Danvers to a marked degree, and by that I mean that it was the most striking thing seen on examining the sections with the high power lens, in seven cases (Abstracts I to VII). Of these the two most marked cases were those already spoken of with uremic deaths, one a patient who was admitted and died suffering from the classical signs of uremic poisoning terminating in delirium and coma, the other a patient with long standing auditory hallucinosis due either to dementia præcox or alcoholic hallucinosis, who died of pyonephrosis secondary to calculi of the urinary bladder and cystitis complicated by otitis media and mastoiditis. Another case (Case V) was apparently a cardio-renal psychosis and death. Two of the cases (Cases III and IV) were acute types of general paresis, both complicated by mastoiditis. The last two of the group were cases of maniacal delirium which

were diagnosed one of them manic depressive manic, and the other either manic depressive psychosis or dementia præcox, but both of which had symptoms explainable on the basis of toxic or organic disease. The comparison of the histological findings in these two cases, with the findings in the uremic cases, aroused considerable interest in some of the assistant physicians of the Danvers staff, who are in the habit of following the work of the laboratory in what time they can spare from clinical duties, and has stimulated us to search more carefully, and sometimes with success, for somatic diseases in acute maniacal cases, particularly if accompanied by confusion, disorientation, or visual and auditory hallucinosis, although we do not wish to be understood as subscribing to the theory of the toxic origin of all the so-called functional psychoses.

In addition to these seven cases, one hundred and seven other cases were examined for this condition of the nerve cells with the result that it was not found at all in seventy-nine cases; in ten cases it was found to a moderate degree; and in eighteen cases it was found rarely or occasionally, scattered through the cortex. These latter cases in which it was found only occasionally were for the most part in the senile period and suffering from the senile conditions. Of the ten cases in which it was found to a moderate degree five had severe cardio-renal conditions, one a metastatic sarcoma in the brain, and three severe septic conditions with senility; another of these cases is of little value because of the lapse of three days between death and autopsy.

Three of the cases in which this condition of the nerve cells was not found, but in which the clinical diagnoses would lead one to expect it if it were due to toxemia or uremia, are also abstracted (Cases XVIII, XIX, XX), and the reasons given with the abstracts why we do not feel that they disprove the toxic origin of the nerve cell condition.

The work here recorded was done in the course of the routine study of autopsy material at Danvers without having its publication in mind. We were beginning to think of attempting to find whether these cortical cell changes could be found in animals after the artificial production of uremic or toxic conditions but when your program committee requested a paper from the Danvers laboratory for this section, we decided on this because we feel that, apart from its purely histologic interest, it has another interest in relation to tendencies of the day in state hospital psychiatry.

Your Committee on Pathological Investigation last year called attention to the decline of interest in state hospital pathology during the five years since 1919, when a similar committee before them had tabulated another decline in the same field and had hoped for a renewed activity in the period of reconstruction following the war. Last year also at the Round Table Conference on Pathology, perhaps the last place one would expect the question, it was asked what was the value of performing autopsies in state hospitals. In New England recently, Dr. Ruggles, now president of the New England Society of Psychiatry, invited a discussion before the society of the "rapidly disappearing state hospital pathologist." We thought it might not be worthless then to offer this as an example of a way in which a state hospital clinical staff and laboratory can coöperate to the improvement of their work and the welfare of the patient. For without the interest of my colleagues and their constant questioning about histological findings in their autopsied cases, this routine work would not be carried on and without it, in turn, the finer analysis of symptoms would not have been brought about. Surely anything which may aid in the difficult task of understanding and caring for the psychotic patient is worth doing and if the performance of autopsies did no more, it would be well to keep the material brain before the attention of those most concerned with its abnormal physiology, namely, the clinical psychiatrist. Even the repeated disagreement in findings and interpretation, apart from new discoveries, tends to cultivate the spirit of humility which comes with the recognition of the limitations of one's knowledge and should always be the accompaniment of science.

REPORT OF CASES.

Case I.—Autopsy 2379, Clinical No. 24497. Hours post mortem, 12 hours, 40 minutes. Male, 39 years, psychosis with somatic disease, uremia. This man had suffered from chronic nephritis with œdema for several years, and had been operated on for carbuncle on the neck six weeks before admission. Died one month after admission. Symptoms and signs typical of uremia with terminal delirium and coma, without previous psychotic symptoms. Autopsy showed hypertrophy and dilatation of the heart, severe chronic nephritis (small white kidneys), cloudy swelling and chronic passive congestion. Brain weighed 1600 grams.

Case II.—Autopsy 2400, Clinical No. 11869. Hours post mortem, 18 hours, Male, age 62, alcoholic hallucinosis or dementia præcox. Died after nineteen

years in hospital of pyonephrosis with calculi or urinary bladder and cystitis. During entire stay in hospital he had suffered continuously from vivid auditory hallucinations. Autopsy showed three large stones, facetted, three to four centimeters in diameter in bladder, cystitis, dilatation of ureters, pyonephrosis and hydronephrosis, right otitis media and mastoiditis. Brain weighed 1480 grams.

CASE III.—Autopsy 2375, Clinical No. 23780. Hours post mortem, 10 hours, 25 minutes. Male, age 28, diagnosis general paresis of three years' duration with seizures and alternating conditions of confused depression and confused excitement. Died following erysipelas and infection of the left eye. Autopsy showed general paresis, left ophthalmitis, right otitis media and mastoiditis. Brain weighed 1310 grams.

CASE IV.—Autopsy 2391, Clinical No. 23252. Hours post mortem, 16 hours, 30 minutes. Male, age 38, diagnosis general paresis of hallucinated, depressed type of two and a half years duration. Died of general paresis and broncho-pneumonia. Autopsy showed general paresis, broncho-pneumonia, left mastoiditis, multiple atrophic ulcers, cloudy swelling of left kidney and adrenals. Brain weighed 1115 grams.

CASE V.—Autopsy 2335, Clinical No. 23968. Hours post mortem, 15 hours, 5 minutes. Male, age 59, psychosis with cerebral arteriosclerosis of a confused and disoriented type with aortic insufficiency, Corrigan pulse, incontinence, with hyaline casts and red blood cells in urine. Autopsy showed slight arteriosclerosis, aortic valve 8.8 cm., chronic nephritis, fairly severe, chronic leptomeningitis with adhesions between dura and pia and pseudomembrane, in which microscopic examination showed accumulation of polymorphonuclear leucocytes. Brain weighed 1325 grams. Microscopically, in addition to the probably toxic condition of nerve cells described in this paper and polymorphonuclear meningitis, there were some sclerosed nerve cells and some fatty nerve cells and in the frontal cortex many rod cells, but no perivascular exudate to indicate general paresis. The cerebral arteries were collapsed and soft. It is reasonable to suspect that the diagnosis psychosis with cerebral arteriosclerosis was a mistaken diagnosis, and that the psychosis was more likely one due to renal or cardio-renal disease.

CASE VI.—Autopsy 2339, Clinical No. 23800. Hours post mortem, 7 hours, 50 minutes. Female, age 32, diagnosis manic depressive manic. This patient had a history of loose habits and hysterical outbursts of excitement with constantly recurring estrangement and reconciliation with her husband. Now for three weeks before admission she had shown severe conduct disorder and had been arrested for creating a disturbance in a church in public. At the Boston Psychopathic Hospital she was violently maniacal with visual and auditory hallucinations; diagnosis "manic depressive psychosis, manic phase" was made and she was committed to Danvers, where in addition to the above mental symptoms she also showed active tendon reflexes, blood pressure 188-78. After four months of acute mania she developed a soft systolic murmur in the aortic area and then became more tractible because of weakness and exhaustion. Two months later she, having de-

veloped a marked diarrhœa which was chronic in its course, died apparently of colitis. Autopsy showed a chronic colitis with chronic pelvic peritonitis, cystic ovaries and emaciation. Brain weighed 1250 grams. This case was particularly interesting to the writer because of the long history of conduct disorder with hallucinations together with the finding of acidophile degeneration (described by the writer at the 1923 meeting of this Association) may indicate the presence of dementia præcox, and the violent maniacal dilirium with visual and auditory hallucinations, the blood pressure of 188-78 and the chronic pelvic peritonitis, together with the toxic condition of the nerve cells here described probably indicate a toxic psychosis, superimposed upon the longer standing dementia præcox.

Case VII.—Autopsy 2361, Clinical No. 24274. Hours post mortem, 5 hours, 10 minutes. Female, age 21, diagnosis unclassed, dementia præcox or manic depressive psychosis. This patient entered the hospital following a history of 13 days' duration of frequent "hysterical" spells and irrationality in conversation and failure of recognition of family. She was finally committed because of the violence of her mania. She died five days after admission of lobar penumonia in both lungs, her temperature having ranged since admission from 99.2 to 103.6°, the temperature of 103° appearing only on the evening before her death. She had had apparently a bronchitis on admission. Autopsy showed lobar pneumonia both lungs, purulent bronchitis. Brain weighed 1290 grams.

Case VIII.—Autopsy 2312, Clinical No. 23836. Post mortem, 2 days, 14 hours, 12 minutes. Male, age 56, psychosis with somatic disease, cardiorenal disease. The history is scant except that peculiarity has been present for six months and accompanied by auditory and tactile hallucinations. He died four days after admission of acute nephritis. Autopsy showed also hypertrophy of the heart, chronic nephritis in addition to the acute exacerbation, pulmonary œdema, chronic passive congestion.

Case IX.—Autopsy 2327, Clinical No. 23653. Hours post mortem, 17 hours. Male, age 56, diagnosis alcoholic deterioration. He had always been a hard drinker and now seemed to be dull with poor memory but acute hallucinations. He remained in the hospital for six months during which he was disoriented, bedridden, and incontinent, died of hydronephrosis secondary to prostatic hypertrophy. Brain weighed 1430 grams.

Case X.—Autopsy 2356, Clinical No. 20468. Hours post mortem, 6 hours, 55 minutes. Male, age 57, psychosis with cerebral arteriosclerosis. He had had a hemiplegia six years before death and had since then been grouchy and fault-finding with blood pressure 200-110 and hyaline casts and red blood cells in urine. For several years before death was irritable, disoriented, and sometimes aggressive. Autopsy showed broncho-pneumonia, cardiac hypertrophy, some arteriosclerosis, puckered, granular, pale kidneys. Brain weighed 1450 grams.

Case XI.—Autopsy 2357, Clinical No. 20849. Hours post mortem, 18 hours, 35 minutes. Female, age 72, undiagnosed. Thirty years before death

had a psychotic attack with melancholia, auditory hallucinations with ideas of reference and persecution and carelessness of personal appearance and habits. She apparently recovered from that and for ten years had charge of the library at Annisquam. Then she lost self-confidence, was taken to a private sanatorium, from which she was admitted to Danvers because of restlessness and disturbance. Here she had the same auditory hallucinations, ideas of electricity, reference, and persecution with good orientation, which she had had thirty years before. Autopsy showed small white knidneys, pressure sores, pulmonary tuberculosis. No definite diagnosis had been made.

Case XII.—Autopsy 2341, Clinical No. 22790. Hours post mortem, 15 hours, 50 minutes. Male, age 68, senile psychosis, characterized by loss of memory and disorientation and accompanied by a blood pressure of 170-100. Autopsy showed arteriosclerosis, broncho-pneumonia, chronic nephritis. Brain weighed 1250 grams. Among other microscopic conditions the cortex contained very many senile plaques.

Case XIII.—Autopsy 2310, Clinical No. 20835. Hours post mortem, 5 hours, 35 minutes. Female, age 72, psychosis of five years' duration characterized by memory loss, slovenly habits, disorientation, confusion and drowsiness; diagnosis arteriosclerotic dementia. Autopsy showed pulmonary tuberculosis, lobar pneumonia, splenic hyperplasia, chronic nephritis, arteriosclerotic changes in brain. Brain weighed 1415 grams. The cortex in this case microscopically showed very many senile plaques.

Case XIV.—Autopsy 2323, Clinical No. 15598. Post mortem, 3 days. Male, age 67, psychosis with cerebral arteriosclerosis. Autopsy showed broncho-pneumonia, thickened edematous meninges, arteriosclerosis. This autopsy was not considered of much value because of the long period between death and autopsy.

Case XV.—Autopsy 2324, Clinical No. 24008. Hours post mortem, 11 hours, 30 minutes. Female, age 54, psychosis with brain tumor. Unusual because of the presence of negative Wassermann reaction on blood and spinal fluid with spinal fluid albumin 2, globulin 0, and mastic curve 4444321100. Autopsy showed cystic sarcoma of the left ovary with metastasis in the left temporal lobe of the brain and also acute nephritis with acute splenic hyperplasia.

Case XVI.—Autopsy 2330, Clinical No. 8257. Hours post mortem, 12 hours. Female, age 83, manic depressive psychosis with cerebral arteriosclerosis. Autopsy showed carcinoma of gall bladder and liver, with acute cholecystitis (purulent) and one gall stone, fairly severe chronic nephritis and jaundice.

Case XVII.—Autopsy 2392, Clinical No. 13620. Hours post mortem, 21 hours. Female, age 53, diagnosis dementia præcox, paranoid. Died of tuberculosis and broncho-penumonia. Autopsy showed miliary tuberculosis of liver and spleen, tuberculous ulcers of the intestine. Brain weighed 1250 grams.

CASE XVIII.—Autopsy 2302, Clinical No. 23739. Hours post mortem, 2 hours, 10 minutes. Female, age 24, diagnosis psychosis with somatic disease, toxemia of pregnancy. Died five days after admission from eclampsia. Autopsy showed pregnancy of about five months, right ovarian teratoma, acute parenchymatous nephritis, dilatation of right ureter and right hydronephrosis apparently caused by pressure from the right ovarian teratoma on the ureter. The cortical nerve cells all showed "acute swelling," which occurs in terminal high fevers or severe toxic states of relatively short duration.

CASE XIX.—Autopsy 2393, Clinical No. 23589. Hours post mortem, 61 hours, 50 minutes. Male, age 42, diagnosis undetermined possibly alcoholic, possibly somatic disease. This patient was a chronic alcoholic who died one month after admission of acute peritonitis secondary to tuberculous enteritis having had signs of active pulmonary tuberculosis and hyaline casts in the urine. Autopsy showed sub-acute nephritis, pulmonary tuberculosis, chronic passive congestion. Brain weighed 1200 grams. The cortical nerve cells here also showed cloudy swelling probably from the peritonitis and many of them sclerosis, significant of older degeneration.

CASE XX.—Autopsy 2273, Clinical No. 23426. Hours post mortem, 9 hours, 25 minutes. Male, age 73, psychosis with cardio-vascular-renal disease. Psychosis of 14 years duration with memory loss, dizziness and headaches and paranoid ideas. Died of broncho-pneumonia. Autopsy showed hypertrophy of heart, chronic fibrous pericarditis, arteriosclerotic nephritis, broncho-pneumonia. Brain weighed 1290 grams. The symptoms are all explainable by senility and arteriosclerosis.

SUMMARY.

This is an account of observations on a condition of the cortical ganglion cells believed by the writer to be caused probably by the action of severe toxic or retained metabolic substances, the observations having been made in the course of routine study of state hospital autopsy material. It has been reported by Mott as occurring in dementia præcox, and by Dunlap as occurring in control cases. Comparison of histological findings in certain cases of acute maniacal near delirious states thought to be manic depressive psychoses with similar findings in uremic and severely toxic conditions of more or less chronicity, aside from its purely histological interest, also affords an example of one way in which coöperation between the state hospital laboratory (the decline of which is alluded to in the body of this paper) and the state hospital clinical staff, can be valuable without being spectacular.

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DISCUSSION.

DR. RAEDER.—Dr. Kelly has given us a very good paper on a condition that has been recognized recently as something new. Work has been done on it before and just what the cause of this condition is in the nerve cells, a more or less acute nerve cell disease perhaps, remains to be seen. Dr. Dunlap has questioned it to the extreme and doubts whether or not it is a pathological condition at all, whereas others have considered it a degeneration, and Dr. Kelly has given us the idea it may possibly be a toxic condition, which it may be. I have observed this condition in certain cases of feeble-mindedness. I have not come to any conclusion yet as to the cause of the degeneration. I did not believe it had anything to do with feeble-mindedness. It may be due to the terminal disease. However, Dr. Kelly's paper is a contribution to stimulate further investigation of this interesting condition.

PELLAGRA.*

Report of a Case.

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It requires a degree of temerity to appear at this meeting with a report of one case of pellagra. The reason for attaching special interest to its study is that the picture exhibited was not complicated by the presence of any other psychosis, and because of this, I have made bold to present a study of the histo-pathology of the central nervous system.

Case.—Hospital No. 15729.—A white woman, 49 years of age.

Family History.—Her mother died of tuberculosis at the age of 62 and her father of "heart trouble" at the age of 66. A maternal aunt developed a senile psychosis shortly before her death, which occurred at the age of 96.

Personal History.—The patient's early life was normal. She was married at the age of nineteen and had four children. Her habits were good. Her medical history was negative until seven years ago when she suffered from a severe attack of pneumonia with pleuritis. Three years ago she was operated and a complete hysterectomy was performed. The condition at this time was not known except that she suffered from severe menorrhagia. The exact date of onset of the pellagra symptoms could not be obtained. The patient's family had noted several recurrent attacks of erythema on the backs of the hands, and of persistent diarrhea. The most troublesome of these occurred ten months before her admission to the Westborough State Hospital and was said to have been almost impossible to check. She complained bitterly and with great frequency of pain in her stomach, especially after eating or drinking. She showed no mental symptoms until about one year before she was first seen, when she began to be irritable. This was especially noted when visitors came to her home as she did not want them and was discourteous; and this was a marked departure from her former attitude. Her memory became poor, and she fabricated, her family at first thinking her falsehoods were deliberate. She began to sleep badly and was unable to do her housework. Shortly after this she began to complain of severe, long-lasting headaches and of diplopia. She then developed weak spells when she had a tendency to fall, but never became unconscious. Later she had difficulty in walking and in using her arms. About a week before

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her admission to the hospital, she expressed the delusion that her family wished to poison her, and occasionally refused to eat. She believed that she had to work constantly soling shoes and would move her hands continually as if at this work, and she said a man watched her and forced her to do this. She was depressed and threatened to commit suicide.

Upon admission she was greatly emaciated and she looked worried and anxious. She was unable to walk without assistance. The backs of her hands and forearms showed the characteristic lesion of pellagra as did her tongue and mouth. She expectorated continually large quantities of saliva, and had a persistent diarrhea. The neurological examination showed the pupillary reaction to be normal, the deep tendon reflexes increased and equal bilaterally, and the superficial reflexes absent. There was no Babinski. Coordination was poor, the gait unsteady, and there was marked swaying upon attempting to stand alone. The speech was defective and rather constant twitching of the hands, arms and face was noted. Mentally she was confused and disoriented, showed marked memory impairment, and was unstable emotionally. She had a temperature of 100° which reached 104° before death. Her strength gradually failed and 15 days after her admission to the hospital she died.

An autopsy revealed lesions produced by pellagra in the skin covering the backs of the hands and forearms, in the tongue and mucous membranes. There were old pleuritic adhesions surrounding the right lung, which probably had their origin in the attack of pneumonia several years before. The lungs, themselves, showed a terminal œdema. With these exceptions the body tissues were not noteworthy. Upon examining the head, the calvarium was normal. The dura mater was not adherent but showed a slight tendency to increased density. The pia mater was lifted from the cortex by a slight excess of fluid and was somewhat thicker than normal. This was most evident over the convex surface of the hemispheres. There was no visible sclerosis of the large vessels. The brain weight was 47 ounces.

In the microscopic study, 40 blocks were cut from the cerebrum and cerebellum, practically the entire brain stem was sectioned, and five levels of the spinal cord. The stains used were:

Toluidin blue with alcohol fixation.
Cresylecht violet, with formalin fixation.
Hæmatoxylin-eosin.
Mallory's phosphotungstic acid hæmatoxylin stain for neuroglia.
The Scharlach rot stain.
Bielschowsky's silver impregnation for neurofibrils.
Weigert's myelin sheath stain.

The pia mater was found to be moderately thickened in some areas with proliferation of the fibro-blasts and this was most apparent over the convexity of the hemispheres. In scattered areas there was a slight degree of infiltration with lymphocytes. The blood vessels showed a degree of change, most of them being moderately thickened with a proliferation of the endothelial cells, and a few showed a small amount of round cell infiltration.

There were no plasma cells. The most striking change in the cortex was a gliosis which was associated with a diminution in the number of ganglion cells, and this occurred in focal areas which were distributed irregularly. In general the increase of glia cells was most evident in the layers of small and medium sized pyramidal cells, and in the inner layer of large pyramidal cells. There was a moderate degree of satellitosis. The Betz cells showed the type of reaction described by Meyer [1] in his cases of central neuritis, and found by Spiller [2] and by Singer and Pollock [3] in their cases of pellagra. The cells were swollen, with chromotolysis, and complete loss of the tigroid substance, and a displacement of the nucleus to the circumference of the cell. In some instances there was a deposit of yellowish pigment. This change was bilateral, and was so extensive that no normal Betz cells were found. Next to these the cortical ganglion cells which showed most change were the large pyramidal cells in the inner layer, some of which were swollen. Other cells showed a moderate degree of shrinking, but many of the ganglion cells were well preserved although their numbers seemed diminished. Fuller,[4] in a recently published monograph, suggests that "either our technical methods are not sufficiently delicate to detect the earliest neural changes or that under certain conditions, the glia bears the first shock of noxious agencies." A very few scattered vacuolated cells were found. The Scharlach rot stain showed a fairly marked deposit of lipoid material, especially in the larger cells, but possibly not more than one would expect in a woman of 49 years of age. Bielschowsky's silver impregnation revealed nothing except a granular broken appearance of the neurofibrils in all cells and in all locations except the cerebellum where the Purkinje cells with this and with all the stains appeared to be well preserved.

In the spinal cord the findings were similar to those of other observers. The cells of the anterior and posterior horns and of Clarke's column showed the axonal type of reaction and there were no systemic tracts of nerve degeneration. In the pons and medulla the motor neurones showed similar changes in some of their cells. It was noted that in the location of the nucleus of the third cranial nerve were found ganglion cells which had undergone chromotolysis with displacement of the nuclei. This is of interest in the light of a clinical history with symptoms of diplopia.

CONCLUSIONS.

This case resembles the cases described by Singer and Pollock, and by Spiller and which they believed were due to a systemic toxæmia. Probably a greater degree of gliosis was found than is described in the series of the first-named authors. Spielmeyer [5] in his Histopathology of the Nervous System describes the condition of the ganglion cells which Nissl designated "Acute Swelling" and which is found in severe acute infectious diseases, and seems to be produced by the direct action of a toxin on the nerve cell. In this

case, as in the cases described by others, the reaction of the Betz cells seems to be more typical of the change produced when injury to the axis cylinder has taken place at some distance from the central neurone, indicating that the injury to the motor area of the brain is indirect.

No specific lesions which could be considered peculiar to pellagra were found in this case.

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DISCUSSION.

Dr. E. V. Eyman.—I don't know why I am asked to speak. I have nothing to add to the discussion. Cases of this kind are rare in the north although they do occur. I had six cases at the state hospital in Yankton, S. D., reported some nine years ago, all of which developed in the hospital and were not pellagrinous psychosis. The psychosis was present before the development of the pellagra. I have a case at the present time in the Pennsylvania Hospital in Philadelphia, diagnosed as pellagrinous psychosis in which there was the typical dermatitis on the hands and the necklace and medallion about the neck, diarrhea and a mental condition which had been diagnosed as dementia præcox. Notwithstanding the diagnosis made, it is probably a pellagrinous psychosis. The cases in Yankton were probably due to dietary conditions; at least one of which was self-imposed, the one who died first having restricted his own diet because of ideas concerning the food.

Dr. J. K. Hall.—The south in recent years has been undergoing changes in many directions, and especially so with reference to the conditions assumed to underlie pellagra as causative factors. I remember distinctly that I saw my first case of pellagra in a state hospital in North Carolina in midsummer 1906. At that time I was unable because of inexperience with the disease not only to make the diagnosis but even to suspect the condition. Then I had only heard of pellagra. But when pellagra was reported in 1907 as occurring in a state hospital in a southern state, then I was able to make a retrospective diagnosis of the condition I had observed in 1906. The patient that I saw in that year died.

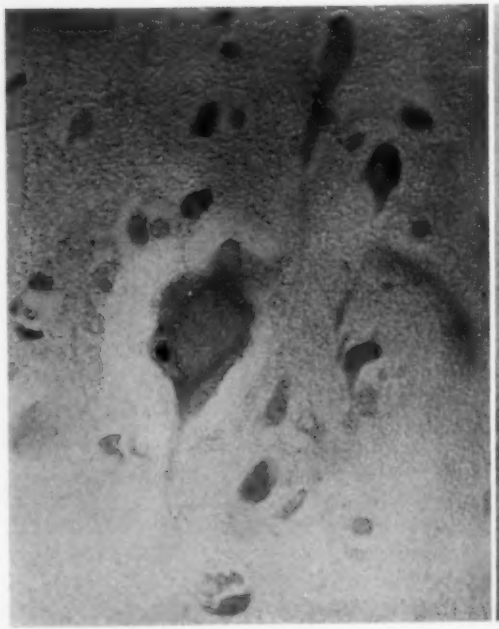

FIG. 1.—Betz cell showing type of reaction.

FIG. 2.—Betz cell showing type of reaction.

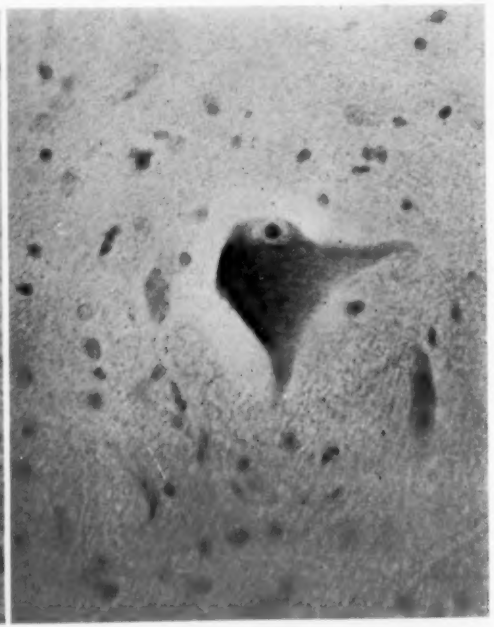

FIG. 3.—Anterior horn cell from the lumbar portion of the spinal cord.

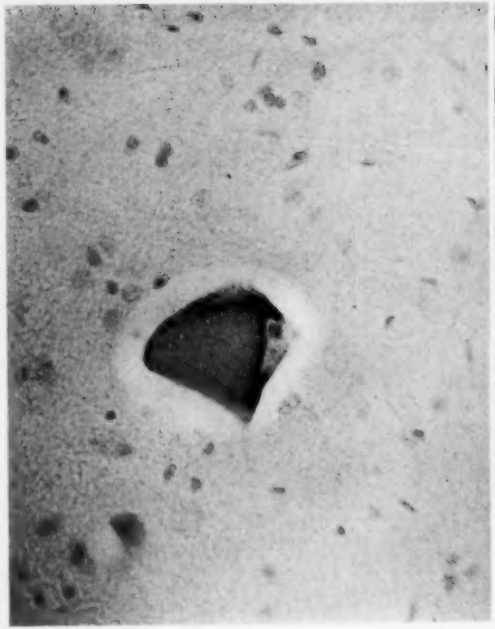

FIG. 4.—Anterior horn cell from the lumbar portion of the spinal cord.

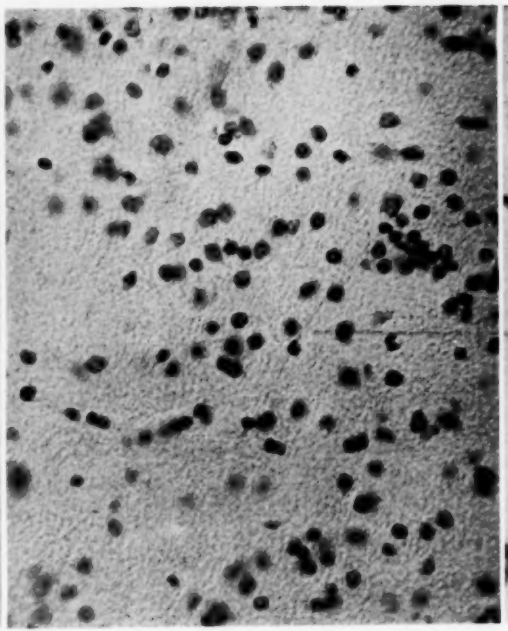

FIG. 5.—From inner layer of large pyramidal cells in left occipital lobe, showing gliosis and absence of neural elements.

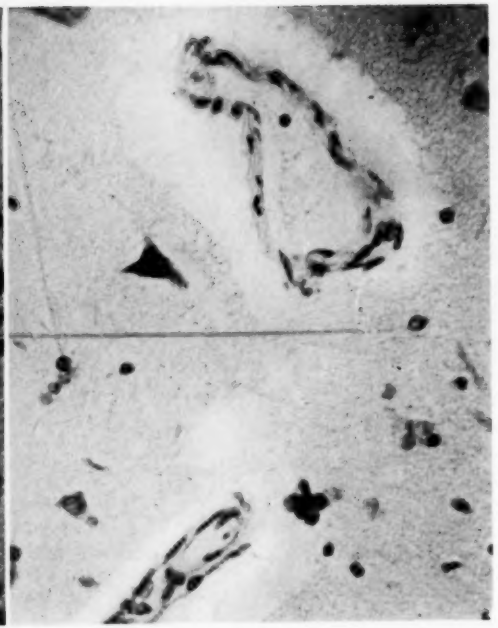

FIG. 6.—Small blood vessels showing type of change.

From 1905 until 1912 I was assistant physician in the state hospital at Morganton. That institution cared for the white insane from the western, mountainous portion of the state, and those, also, from the piedmont level of the state. During that period of seven years as a physician in a state hospital I saw many cases of pellagra. Most of them died. The disease was apparently more virulent and deadly in 1908, for instance, than in 1911. In many patients the nature of the malady was not recognized, commitment frequently was not made to the hospital until the patient's condition was critical, and in such circumstances death was the rule. The psychosis which had developed out of the pellagrous condition made treatment difficult, because it generally made it impossible to secure the patient's cooperation.

With reference to pellagra I feel reasonably certain of one or two things. I know, for instance, that I know entirely too little about the condition to allow me to dogmatize about it. Does the condition constitute a medical entity, or is the situation only the generalized reflection of a peculiar sort of disturbance of metabolism? Is the condition a disease due to infection? The mere fact that it improves and that its symptoms often disappear, indeed, in the presence of proper feeding does not justify the conclusion that the condition is a reflection of some degree of starvation. The situation begot by tuberculosis infection frequently undergoes enormous improvement when the patient is properly nourished. But no specialist in the treatment of tuberculosis that I happen to know is willing to claim that the condition is eradicated by a wholesome, well-balanced, adequate diet. I have been impressed by the frequent association of alcoholism and pellagra. I venture the assertion that most of the men in whom I have seen pellagra have been whisky drinkers. That statement was true even when good whisky was obtainable. Those who hold to the theory that imbalance of diet causes pellagra can explain the situation by the statement that chronic whisky drinking generally means, also, a relative degree of starvation. Mayhap.

Every physician who presumes to know anything at all about pellagra knows that the disease, if it be a disease, has almost disappeared from the south. The condition nowadays is seldom seen, and when seen it is usually of mild type. How shall we attempt to make explanation of these two facts? If the condition be due to starvation are we to understand that the dietary in the southern states has undergone such remarkable improvement? Has the former prevalence of the disease throughout the south immunized, in some strange way, almost everybody against it? I know the south is in better economic condition than ever before. The people are better clothed, better housed, and better fed than ever before in their lives. They have been taught the value of good health, how to get good health and how to hold to it, and many diseases once prevalent in that region are now rare—amongst these is pellagra.

I am glad the condition is disappearing, and glad, too, that interest in it survives. The disease may occur again. We should make use of the per-

spective that time has given us with reference to the condition to the end that our knowledge about it may be increased. I am certain that the final word about this strange phenomenon has not been spoken.

Dr. Meyer.—I am inclined to ask a question of those who have had experience with large numbers of patients such as I used to in the days of state hospital experience, largely with the view to making a statement with regard to cases of what I then called central neuritis. It was a condition which I cannot help feeling must have been due—at any rate most probably due—to some food deficiencies. All the cases I do remember had a tendency to refuse to eat and therefore were fed by spoon or tube. I wish it were possible to reinvestigate the exact preparation of the diet used. I feel it would be exceedingly interesting to know whether the physicians of various hospitals still have experience with central neuritis, which formed a real endemic disorder at the Worcester State Hospital in the later nineties.

Dr. Brown.—I have been treating pellagra for 14 years and do not think we should have the classification of pellagra psychosis. We find the mental condition that of toxemia, similar to the delirium of typhoid fever, penumonia, etc.

I think Dr. Meyer is correct in the statement that the central neuritis is probably due to the lack of proper food. Under forced feeding the neuritis occasionally clears up. Recently we had a recurrence in a patient who had been in a hospital in another state and we have been feeding her raw beef. In addition to the raw beef she was given the regular pellagra diet. Marked improvement was shown within five days.

With us the death rate has been quite low, although some have been sent in with typhoid delirium and central neuritis. Some of our patients have been at their homes from four to five years and are well. A large per cent make complete recovery. We feel that pellagra is a nutritional disease, due to improper diet, especially to the lack of fresh vegetables and milk. The nervous manifestation is really that of starvation.

We have had the opportunity of making a few post-mortems. The pathological findings showed nothing specific.

Dr. Kelly.—I think of a case in Danvers, a boy now about 27 years old who has been in the hospital for several years with dementia præcox, and who about annually has an attack of pellagra with the typical skin lesions on the neck, hands and arms, with diarrhœa, etc. Just before I left to come here the skin lesions were reappearing. I am sure he never had a drink in his life and I suggest that even one such case disproves any etiological connection between alcohol and pellagra such as has been suggested during this discussion.

Dr. Farr.—At the Pennsylvania Hospital we recently had a fatal case of pellagra. Dr. A. E. Taft, neuropathologist in the Department for Mental and Nervous Diseases, made the histological study in this case and found

lesions almost identical with those described by Dr. Pierce. In regard to the dietetic part, I was interested in reading a recent authoritative summary ("Nutrition"—Mendel), to find that it is becoming more and more to be accepted that pellagra is due to dietary deficiencies.

Dr. Gregory.—It has been my privilege to study quite a few cases of pellagra, and I have come to wonder if the cases we see in the north do not differ in certain respects from those in the south. Many of the cases which I have seen have started off with what Dr. Adolf Meyer has called "central neuritis," as the initial clinical picture, the skin and intestinal manifestations following later. I have been told by several physicians from the south that the skin and intestinal manifestations are ordinarily the first signs, and that the "central neuritis" picture, if it comes at all, appears as a terminal manifestation. In view of the fact that the central neuritis picture, generally accompanied by diarrhœa, may occur independent of skin lesions, makes one wonder whether or not it is an essential feature of pellagra after all. Whether or not pellagra is a dietetic problem one cannot help but wonder. There is no question but that a great number of patients improve on a liberal diet, though it is often impossible to prove that prior to the onset of the disease there had been a deficiency in any food elements.

CONSTITUTION AND DISPOSITION IN PSYCHIATRIC RELATIONS.*

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The conception of psychiatric disorders as psycho-biological problems has made it necessary to consider the great complexity that is involved in their etiological relationships. Experience has shown that only exceptionally is any psychiatric disorder determined by sharply defined and narrowly circumscribed causative influences or situations, and that one must consider a wide variety of interacting factors that are important in the production of the disease and its symptoms. It is not a question of this or that factor alone but rather how much of this and how much of that.

Etiological relationships of the psychoses are fundamentally centered in two aspects, one the quality of the individual and the other his experiences. In respect to etiology the individual is a most complex unit in an interplay of forces and situations within and without the body which involve both physical and psychic interrelations. Some of these factors in their nature and action are so unclearly defined as to permit of consideration only in speculation and theories, while others occur as concrete and intelligible elements that can be objectively studied and discussed, and fit into the general body of scientific facts.

In any interaction of either endogenous or exogenous factors the quality of the individual must be a determining factor in the production of any result. The qualities of an individual have their expression in the constitutional and dispositional relations that are his personal possessions.

Clinical observations have long taken into account the fact that in the etiology of disease individuals differ in their susceptibility and ways of reacting to various agencies and experiences, and that the symptoms and course of a disorder are determined by factors inherent in the individual as well as in the environment in which he lives.

* Address before the New York Society of Clinical Psychiatry, October 11, 1923.

Problems of constitution and disposition in relation to disease have always had a peculiar importance in psychiatry although their formulation has been less easy than in the somatic field. In the latter the standards and elements that are dealt with are more objective and lend themselves to investigation and discussion by methods and terms generally intelligible in medical science. In the consideration of constitutional relations in psychiatry one is largely forced to deal with the subject in less clear concepts and the subject has been discussed in such general terms as predisposition, anlagen, psychopathic constitutions, reaction types, endogenous or constitutional disorders and similar connotations without always being able to reduce these to more simple and comprehensible elements. The early recognition in the history of psychiatric progress that mental disorders had hereditary and familial relations necessarily forced an interest in problems of constitutional qualities that has never been lost. This interest became intensified and more clearly outlined as psychiatry drew away from the view that the problems of soma and psyche lay in two fundamentally distinct fields. This viewpoint can no longer be maintained in harmony with the now generally appreciated fact that the functioning of an individual can only be understood by regarding him as a unit in which all structures and functioning are mutually interacting. If this is so then constitutional and dispositional factors of the somatic field must be interrelated with those of the psychic. The concrete exemplification of this is seen in the hormonal action of the products of the endocrine system. In this, chemical agents, products of both somatic and nervous system glandular structures, initiate and control physiological functioning in somatic, nervous and psychic fields. It is, of course, obvious that constitutional and dispositional relations of the human organism are fundamental for processes of health as well as disease. They are the soil and the settings with which experiences work to determine temperament, character, mental efficiency and behavior.

Within recent years there has occurred a renewed interest in the constitutional and personal dispositional relationships of psychiatric disorders. The subject as developed in a relatively considerable number of contributions has opened up viewpoints and concepts that give a new orientation in the problems of the physical and psychopathology of psychiatric disorders. This interest

has been stimulated by the biological viewpoints that have come into psychiatry, in particular the application of Mendelian principles to the study of the relations of heredity to the psychoses, and the insight that has been gained into the correlations between structural, physiological and psychological fields, through the hormonal influences from the endocrine system.

Problems involving constitutional and dispositional factors have now acquired formulations that permit research with experiment and deductions from analogies in other biological fields that have added greatly to psychiatric knowledge. The connotations of what are implied in the terms constitution and disposition, that will be maintained in the present discussion are those held generally in pathological considerations. These are very clearly stated by Bauer in his work on constitutional disposition to disease.[1] In discussing the variability of individual disposition to disease, Bauer states that "this variability rests on the individual and temporal differences of the body states. This in turn results from two factors: First, those qualities that are laid down at the moment of fertilization and second, the multiform intra- and extra-uterine acquisitions, influences and adaptations of the organism." The first of these factors he designates as "constitution" and the second as "condition." Both together determine the body states that give the disposition to disease. Individual disposition to disease may, therefore, be constitutional, conditional or combined constitutional-dispositional. Kretschmer in his "Körperbau und Charakter"[2] has stated these distinctions in much the same way, defining the constitution as "the totality of all individual characteristics that are attributable to heredity."

Distinctions as to what is inherited and what is acquired are difficult to determine. Sharp separations are usually impossible in clinical considerations, and one is easily led into analyses and theories that leave at the end a good deal of vagueness. Disposition depends upon constitution and constitution without disposition does not lead to disease. As yet we have no knowledge of just what is inherited. We observe in the somatic field certain qualities, growth tendencies, types of physiological functioning, in members of a family or descendants. We, however, know little more than that these are the result of factors, that while appreciated, are not at this time analyzable in their primary beginnings.

We now know that many qualities or characters that have been usually considered as unit factors, such as qualities of body growth, abnormalities of skin and hair, various disorders of metabolism, and probably many others are primarily conditioned through abnormal functioning of body organs. The inherited qualities are those that make possible this abnormal functioning. They are the factors that determine the personal disposition to disease.

There is nothing in psychiatric experiences to indicate that the general concepts of constitution and disposition to disease, that seem valid in relation with somatic pathology, are not applicable to the field of psychiatry. When one undertakes to deal with the elements and factors that make up the abnormal psychic constitution it is apparent that these are less well known in their qualities and relationships than those in somatic pathology. In large part they concern both quantitative and qualitative differences in the affective field, in associational arrangements and in the amount and flow of psychic energy. In a strict consideration one is warranted in designating as the fundamental factors of the psychic constitution only very general qualities. Birnbaum [8] in his discussion of the concept of constitution as it relates to psychiatry would consider the psychic constitution in such qualities as general psychic reaction, functional capacity for work and psychic resistance power. These qualities may occur in abnormal degrees and thus determine an abnormal psychic constitution. Various types of these can be clinically differentiated. Where there is a lessened capacity for work one recognizes a characteristic of the asthenic constitution. A labile psychic constitution exists where there is a pathological lessening of the resistance capacity. The dissociative constitution is characterized by an incapacity for functional coördination and self-regulation. The evidences of a pathological psychic constitution are indications of a special sensitiveness towards influences that produce psychotic manifestations. They show a preformation of definite disease forms or conditions, or at least definite symptom complexes and types of course. If one would adhere to a strict connotation for the concept of constitutional one might speak of a psychopathic constitution, as a general condition which clinically might show in quite different reaction types, but it would be incorrect to speak in this relation of a paranoid constitution. The reaction forms that depend on constitution are

general fundamental functions and not special reaction tendencies. These latter Birnbaum regards as being in relation with special dispositional factors. The differences between these are illustrated in the special way one would form a question regarding these. One would enquire as to what sort of a constitution and disposition to what?

The sources of psychic constitution lie in the germ plasm of the ancestors and this at some time or other in the ancestral experiences may have become conditioned for disease. The factors or influences causing this may have been the same in their nature as those we know are capable of producing disposition to disease. Toxic factors of exogenous or endogenous origin may, acting as dispositional influences, change a constitution of a descendant towards general or specific diseased reactions. Stockard's [4] important experiments tend to show that an agent acting in a dispositional way upon an individual may produce an abnormal constitution in his descendants. Data such as he has furnished seem to indicate that much that is now unclearly discussed in terms of constitutional can be ascribed to determining influences of a comprehensible quality and the viewpoints opened up by these and other clinical and experimental observations become of fundamental importance for psychiatry.

The factors producing disposition to psychotic disorders are both general and specific and exert their influence either temporarily or permanently. As general factors, we are concerned with the influence of sex, age, race, climatic conditions and general living relations. In respect to the influence of sex we have the greater liability to psychotic disturbances incident to the strong part that affective factors have in the psychic qualities of the females and the disturbances of the puerperal state with their physical and psychic stresses. In the male there is a greater liability to disorders incident to environmental factors of social life and occupations.

Age shows its influence in relation with the greater frequency of certain disorders at various epochs of life. The predominance of schizophrenia in youthful years, the paresis of adult life and the arteriosclerosis and senile psychoses in the period of advanced life. Regarding race we have little information, but there is some data that seem to show that psychoneuroses are relatively more

frequent in certain races than among others, and that manic-depressive psychoses tend to show a predominance of depression over excitement among certain populations.

There is some reason to believe that climate and seasonal relations of the year may produce a disposition to psychotic disorders. This shows in the greater frequency of suicide and crimes of violence in certain seasons of the year. In this relation one might consider the influence of tropical life upon the psychic state of Europeans living in these regions.

In the social and economic aspects of general living conditions there exist influences that may be either causes or effects. Poverty, neglect, and unhealthy living conditions may create a disposition to disease, and individuals who have psychotic abnormalities tend to congregate in low social levels. All of these general factors have their effects both in influencing physical as well as the psychic qualities towards abnormalities and disease.

A disposition to psychotic disturbances may be created by a wide range of somatic factors which in themselves may be normal or abnormal. Some of these are temporary in their influence, others are permanent. Mental health is so intimately a part of general somatic health that most serious diseases of the body or its organs cannot exist without in some degree having a psychic effect. If abnormalities or disease involve structures and mechanisms specifically fundamental in their relations with psychic functioning, their influence in producing disposition to psychotic disorders is especially important. In this category are the congenital and early acquired defects and disease processes of the brain, defects of the organs of the special senses and the complicated structural and functional abnormalities of the endocrine apparatus.

In the consideration of somatic factors in relation with psychotic disorders we are involved in a field in which distinctions between direct and indirect causative influence and the production of a disposition to a psychotic disorder are not always separable.

Not only are the soil and settings which underlie the occurrence of abnormal psychic action and disease influenced by diseases of somatic organs and functions, but the continually changing balances and arrangements of normal physiological functions, produce different states which under suitable exciting factors produce disordered psychic relations.

It is well known that susceptibility to general and specific forms of psychic and nervous reactions may be modified by physical disease. After a physical illness reactions to alcoholic or other stimulants are sometimes known to be more intense or different than before. Mental fatigability and neurasthenic states are often prolonged in the convalescence from physical disease. The weakened somatic states in severe anemia or exhausting physical disease produces not infrequently a disposition to paranoid mental reactions. Pulmonary tuberculosis and some forms of cardiac disease are often accompanied by euphoria, while on the other hand gastro-intestinal disorders are commonly associated with emotional depression.

This aspect of the complex and extensive interaction of psychic and physical factors in their influences upon the disposition to health or disease has been interestingly discussed by Bleuler in his "Physical and Psychic in Pathology."[5] Among other examples of this interaction he directs attention to the well-known influence of affective states in the course of a physical disorder. This may be harmful or beneficial. A very clear illustration of these mechanisms is the frequent association of organic and psychogenic symptoms in the same disease. The organic creates the disposition to psychic symptoms and the psychic modifies or creates the disposition to a physical disturbance. Bleuler[5] calls attention to the physical and psychic interplay shown in Freud's theories of the utilization of specific weaknesses of body organs and functions in psychogenic reactions such as are embodied in the so-called flight into a disease. The physical creates an inclination or necessity for a certain process. The psychic determines the time of its occurrence and the type of the reaction. In the neuroses there usually exists a disposition or anlage on which the causative factor produces the disease. The number and range of these interactions of disposition in the production of reaction forms and disease processes is almost unlimited and shows throughout all psychiatric problems.

Conditioning of psychic relations towards a specific disposition goes on continuously in qualitative and quantitative ways from the earliest moment when the central nervous system becomes receptive to stimuli from the environment. Even before this moment somatic and cerebral patterns have been shaped that later will condition psychic states. The elements and mechanisms utilized

in abnormal psychic functions may in their fundamentals be possessions of the healthy individual. They gain importance for pathological relations as their balances become disturbed in quantitative and qualitative degrees. It is in these relations that one has to consider the entire phylogenetic evolutionary development as a determining force for psychic reaction tendencies. This question has been clearly formulated by Kraepelin in a recent contribution[6] in which he states that "preformed reaction mechanisms exist in normal individuals that are not manifested until influenced by pathological changes in the organism. In these relations they are fundamentally of constitutional or dispositional qualities. Psychic elements and mechanisms work in ever changing physiological functioning and this at any moment may be such as to turn a psychic situation from normal into pathological directions." When one recalls the varying quantitative and qualitative affective states that are set when experiences act it becomes apparent how a disposition may be shaped that may produce conditions recognized as diseased. Take the varying physiological relations that are set during an average day's experiences or the normal periodic changes that occur in the body physiology such as the menstrual period of women, when the heightened affective excitability gives to experiences and reactions a dispositional quality that may produce either transitory or permanent pathological manifestations.

The chief importance that the abnormal psychic constitution and disposition can have is in its practical application to clinical problems and that it enables one to construct from these conceptions of clinical types of disease and forms of reactions. Clinical experience shows the tendencies towards specific types of reaction in the case of psychoses of clearly external etiology. In these instances it is usually assumed that one must ascribe special importance to endogenous factors or personal disposition. A dispositional quality stands out quite clearly in some of the psychoses due to toxic factors. One is familiar with the tendency to delirious reactions in the somatic disorders due to bacterial infections. Bonhoeffer[7] and Kleist[8] have drawn attention to this in contributions citing cases of individuals who have a delirium even with slight infections or febrile states. In some instances this is a more or less habitual reaction, recurring with each attack of illness. It has been noted that this tendency sometimes is a family characteristic thus bringing

this question into those of hereditary relationships. Attention has recently been directed by Lermann [9] to the character changes which occur after lethargic encephalitis and that in some of these instances there existed an abnormal psychic disposition in the form of a psychopathic constitution before the encephalitic attack. One is familiar with the tendency of some children to react with convulsions to slight infections or digestive disturbances. In alcoholism personal disposition in its determining influence upon the symptoms of the mental disorder is especially well marked. In spite of a common etiological factor there may occur a considerable variety of reactions that are not specific effects of alcohol. The most characteristic of these is the pathological type of intoxication in which the abnormal psychic reactions are out of proportion to the amount or quality of the alcohol taken. Some alcoholic disorders have prominent hallucinations others not. In some these are predominantly visual in others auditory. There are cases with and without delusions. Some take the form of the Korsakow's syndrome while others progress in a chronic mental deterioration. Such differences seem to have their explanation in constitutional or dispositional qualities of the individual.

In paresis one is familiar with marked differences in the psychiatric symptoms and it has been suggested that the reason some cases are expansive and others depressed or dementing in course is a matter of the individual's constitution and disposition. There are other ways in which constitution and disposition have a determining influence in the occurrence of paresis. It may be that the relatively small number of those infected with syphilis who develop paresis is a matter of the quality of the disposition and constitution of the individual. The fact that paresis develops only after a relatively long period after infection is one that may be due to disposition. It may also be a factor to be considered in the question of why paresis is more common among certain classes of people or cultural levels.

It is especially in the so-called endogenous psychoses that constitution and disposition are of fundamental importance as etiological factors and determiners of symptoms. They produce a soil or setting that in a general use of the term one may designate as a psychopathic constitution. This psychopathic constitution has quite different reaction possibilities which may become manifested

clinically in specific types of mental disorders depending upon the quality and determining influence of special factors. As clinically differentiable types we are familiar with the psychoneurotic, the cyclothymic, schizothymic and the epileptic constitution. To distinguish whether these are strictly constitutional or are dispositions that have become conditioned is often a matter of uncertainty. We, however, know that they are in a large measure qualities that are inherited. The dispositional factor stands out with especial clearness in the large group of the so-called psychopathic personalities. In these there exists a disposition that shows abnormal balances of the affective functions and a pathological influence on thought and behavior. Kraepelin [10] regards these disorders as psychic malformations or forms of circumscribed infantilism of the affective reactions. The individual of psychopathic constitution is one in whom pathological psychic disturbances occur, as reactions to experiences, more easily than in the average. They show general lessened resistance towards affective stresses and a tendency to react in functional disturbances in quite varied ways. Their constitutional quality is shown in their not infrequent intermingling among more clearly differentiated psychoses of endogenous type.

The psychoneuroses are in large measure determined by individual constitution and disposition. Experiences alone are usually inadequate to account for the determination of the pathological reactions characteristic of this group. Granting full measure of importance to the psychic effects of experiences and their temporary or lasting traumatic influence there stands out the fact that not all who meet with such experiences react to these with psychoneurotic symptoms. One finds in Freud's discussion of the neuroses [11] the statements that " in more than one-half of his cases of severe hysteria, obsessional neuroses, etc., that syphilis of the father before marriage was to be proven." " The abnormal psychosexual constitution could be observed as the last off-shoot of luetic inheritance." " The heredity finds expression in a peculiar psychosexual constitution of the individual which asserts itself in an abnormally strong and many-sided instinctive life and a consequent sexual precocity. Frank in his monograph on " Affect Störungen " [12] states the situation very clearly in his discussion of the psychoneurotic temperament. He comments that " these are

individuals with a characteristic type of affective reaction. They are best compared with artistic natures; as these differ from the average man so do these in having a psychoneurotic disposition. This characteristic type of psychic reaction is conditioned solely by the anlage. Their entire affective life is different from the average man. The impressions they receive cut more deeply and the traces that these leave are less easily worn away."

In epilepsy abnormal qualities of constitution and disposition have long been appreciated. The hereditary relations of this disorder, its occasional familial occurrence, the unstable affective qualities of the epileptic, and the periodical variations in body metabolism are evidences of a profound interrelation with the constitutional aspects of the individual. A recent study of the physiology of epilepsy by Frisch [33] leads him to the conclusions that the foundation of all epileptic disorders is the functional quality of the brain that causes it to react to irritants with convulsions. " Modes of life in which this reaction capacity is physiologically absent will never produce epileptic convulsions. Capacity for reactions with convulsions is a biological function of the central nervous system. The most characteristic feature of the epileptic is the extreme lability of the metabolism, and this is due to abnormal functioning of organs. To regard epilepsy as caused by exogenous organic disease of the brain is untenable." A constitutional quality in relation with epilepsy has recently been shown in the interesting study by Rosett.[34]

It is in relation with the two great psychotic groups of cyclothymia and schizothymia that the question of constitutional and dispositional relations has recently gained particular interest. In the progressive development of conceptions of the nature of the manic-depressive psychosis, increasing attention has been given to its underlying constitutional aspects. Its hereditary relationships and the characteristics that show in the cyclothymic life course in this disorder are evidences of some fundamental specific quality that must lie in the constitution of the individual.

The constitutional and dispositional relations of schizophrenia have been later acquisitions to our knowledge. The study of families in which schizophrenia occurs has shown that there are abnormalities of constitution that seem to stand in some hereditary relation to the disorder. The recognition of the abnormalities com-

monly observable in schizophrenic individuals in pre-psychotic phases, the recent concepts of schizoid qualities of character and temperament, and the physiological and somatic disturbances associated with the progress of this disorder has forced upon us the conception that in schizophrenia constitutional and dispositional qualities are of fundamental importance.

Interest in this problem of constitutional relations in both cyclothymia and schizophrenia has been stimulated by the recent contribution of Kretschmer[2] who in his monograph on "Körperbau und Charakter" has presented data and viewpoints that give us a new orientation in this field. In clear formulations of what is involved in the concept of constitutional factors he puts forward theories and points of view regarding correlations of somatic and psychic relationships that have an application not only in the psychoses but also in a wide range of interests dealing with human qualities and temperament.

A study of the physical characteristics of the body in cases of cyclothymia and schizothymia leads him to the formulation of a theory that in each of these groups of psychoses definite types of physical constitution are in relation with specific psychic qualities. He finds that in schizothymia there is a marked preponderance of body structures that are of asthenic, athletic or dysplastic endocrinopathic types or intermixtures among these. In cyclothymia the dominant quality of body is of a thick set or pyknic type. The characteristics of these contrasting types are evident not only in the general structure of the body frame, but in the quality of the body surfaces. It is his belief that the psychic constitution of an individual expresses itself not only in its psychological qualities, but also in the comprehensive manifestations of his entire personality in all of its life phases and that the endogenous psychosis is but an episodic and partial segment. These correlations exist also in non-psychotic individuals and can be shown to be determining factors in their personalities and in the quality of their creative energies.

The individual constitution as formulated by Kretschmer[2] "Is the totality of all the individual characteristics that are based on heredity. Constitution has its psychic correlates in character and temperament. Character is the totality of all the reaction possibilities of an individual that are regulated by his affective volitional

functioning. Character is a matter of the affective life. Temperament is conditioned by the blood humoral chemistry and their physical correlate is the brain-gland interrelations."

Qualities of temperament are essentially influenced by the endocrine system. As evidences of this Kretschmer [2] comments on the well-known abnormalities of temperament that occur in states of hypo- and hyperthyroidism and after sex gland castration. These correlations of body habitus and temperament suggest that the temperament types characteristic of cyclothymia and schizothymia have similar correlations with humoral relations. They are concerned with the entire blood chemistry of the body. There thus exists not only a parallelism between brain and psyche but also soma and psyche. In schizothymia the facts seem to indicate that there exists a complicated dysfunctioning of the sex glands in correlation with the entire endocrine apparatus and brain. On the other hand, in cyclothymia the characteristics of the individual's constitution seem to be in correlation with the glands controlling the general nutrition of the body. Here also there may be a humoral relation.

The temperaments according to Kretschmer [2] apart from their central relations are dependent upon two great hormonal groups. One of these acts in relation with the diathetic states or the nutritional metabolism of the body, and the other on the psychæsthetic or affective balances. In the average individual these two groups of hormones are mixed in changing relations, but in cyclothymia or schizothymia one or the other has gained a dominance; the diathetic in cyclothymia and the psychæsthetic in schizothymia. This dominance may have been determined through inherited qualities or developed through selection in family interrelations. That these qualities do have relations to family inheritances has been shown in the studies on heredity by Rüdin,[15] Kahn,[16] Hoffman,[17] and others.

It is these two contrasting constitutional qualities that are embodied in the concepts of schizoid and cycloid or as discussed by Bleuler [18] schizoid and syntony. With a viewpoint that harmonizes with the conceptions of Kretschmer, Bleuler presents the theory that every individual has in his anlage a schizoid and syntonic component. Normally these exist in an equilibrium, but conditions may occur that give dominance to one or the other of these in the quality of the psychic reactions. One not infrequently observes

the two qualities intermingling in a psychosis to produce such atypical clinical reactions as schizo-mania, and cycloid-schizophrenia. In psychoses of exogenous origin one may sometimes recognize the temperamental characteristics of these two conditions determining the reactions and symptoms during the course of the disorder. In this relation Binzwanger[19] has published an interesting study on schizoid reaction in alcoholics.

An interesting theory regarding these somato-psychic interrelations has been discussed in a recent contribution by Ewald.[20] This recognizes that there are in the organism two great gland groups. One of these acts as an accelerator of body metabolism, the other as an inhibitor. These two organ groups he does not regard as identical with Kretschmer's contrasting groups of visceral and endocrine glands. These two groups are normally in an equilibrium, whereby a definite metabolism rate is maintained by a harmonious interworking of all glandular organs on the entire blood chemistry. This metabolism rate may be disturbed in two directions. In one of these the accelerating group may gain a dominance and the automatic regulatory opposition no longer acts as a check. This correlates with the sanguine, hypomanic or manic temperament. In the other direction the inhibiting group may dominate and there results depression or melancholia. Ewald believes it is probable that these two organ groups are controlled by a vegetative-nervous-metabolism center that on occasion becomes disturbed so as to produce a dominance of either the accelerating or inhibiting group. He would regard the manic-melancholic psychosis not as a disorder of internal secretion, but rather the result of a central disturbance working on the body glands.

While much of that which has been done in the investigation of somato-psychic correlations has led to theoretical deductions that may not hold after further observations, one cannot help being impressed by these new formulations. It is, of course, obvious that conceptions of the importance of constitution and disposition for the problems of psychiatry are not new. We must, however, recognize that this newer work has given us a better insight into the way these various factors work not only in determining psychiatric disorders, but also the average human personality.

The methods of biological research gain a wider application in the solution of psychiatric problems. Clinical and laboratory investigations must reach out into a field which includes the entire structure and functioning of the human organism. Normal and pathological interweave in producing the complicated structure of the human personality. The psychoses "in their constitutional aspects are but scattered knots in the complicated network of normal somatic relationships." (Kretschmer.)

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WHAT IS MENTAL HYGIENE?*

A Definition and an Outline.

By E. STANLEY ABBOT, M.D.

Introductory.

The term "mental hygiene" occasionally appears in literature between the forties and the late eighties, but I do not find it in Tuke's Dictionary of Psychological Medicine (1892) nor in Baldwin's Dictionary of Philosophy and Psychology (1901-5). The impetus to its more recent use is due to two men, Dr. Adolf Meyer who suggested it and Mr. Clifford W. Beers who adopted it, in 1907, as the "watchword" of a projected "permanent agency for reform and education in the field of nervous and mental diseases" whose purpose should be "the spreading of a common-sense gospel of right thinking in order to bring about right living."[1]

Since that date the term has been acquiring a wider and wider vogue. A rapidly growing literature has sprung up, with contributions from many sciences, especially psychiatry, psychopathology and psychology, both "academic" and "dynamic." Many other sciences, medical, biological, and social, have also contributed. Most of this literature deals with special aspects of the subject, and especially with morbid factors, their recognition and prevention. There is comparatively little on the constructive side, and no comprehensive exposition of the subject as a whole. There is no one source to which the inquirer as to what mental hygiene is can be referred. Efforts to fill this gap, however, are beginning to appear.

In what follows I have tried to outline a conception of mental hygiene as something positive and constructive, not merely, or even chiefly, preventive, and without undue emphasis on the morbid.

* Read at the eightieth annual meeting of The American Psychiatric Association, Atlantic City, N. J., June 3, 4, 5, 6, 1924.

[1] Beers, A Mind That Found Itself. 1st Ed., p. 295.

It is developed from the biological point of view,[2] namely, that man, like other living creatures, makes, repairs and partly directs himself and produces others like himself; that he must continually adjust himself, by means of his internal self-directive activities, about as well as he can to his environments; that his good adjustment is efficient living; and that all his reactions and behavior are those of the individual as a whole, not of a part only (such as of his brain; of certain segments; of his "unconscious"; etc.).

I. What Is Mental Hygiene?

As its name implies, mental hygiene is a division of hygiene, though scant attention has been paid to it in the text-books on hygiene, until the last five or six years.

Hygiene is defined as "the promotion and preservation of health" (Century Dictionary). Health is defined as "that condition of a living organism and its functions which conduces to efficient and prolonged life" (*Id.*). Life is defined by Herbert Spencer[3] as "the continuous adjustment of internal relations to external relations" but it would be better defined as "the continuous self-adjustment of the individual to its changing environments." These definitions may be summarized by saying that hygiene is the promotion and preservation of that condition of the organism which enables it to adjust itself efficiently and continuously to its changing environments.

To thus adjust itself efficiently the organism needs (a) to be born well, (b) to develop well, (c) to keep well, and (d) to act well, (e) in an environment, and (f) under conditions, which are not insuperably unfavorable. For such living the mental factors become more important the higher the organism is in the evolutionary scale.

Mental hygiene, therefore, as aiming to promote and preserve the mental determinants of right and efficient living, must consider and promote (a) good mental endowment, (b) good develop-

[2] This was imperfectly elaborated in an article "The Biological Point of View in Psychology and Psychiatry," Psychological Review, Vol. XXIII, No. 2, March, 1916, p. 117.

[3] Principles of Biology, Vol. I, p. 99.

ment of the mental capacities, and (c) good[*] use of them, and (d) the factors and conditions that are favorable to them. Promotion of the good involves prevention of the harmful. Hence, mental hygiene must also consider (e) the nature of those factors and conditions which hinder or impair these desiderata, and (f) ways of preventing such factors and conditions. It must further consider (g) the effects of harmful influences, (h) ways of restoring impaired functions, if possible, to an original state of efficiency, (i) ways of counteracting the effects of impairment, and (j) ways of helping the handicapped individual to compensate for the impairment, in order to promote the most efficient living of which he is capable. This must include (k) the care of the handicapped, in order that the environment may be as positively favorable and as little handicapping as possible. Many of these latter considerations belong in the domain of psychiatry, but mental hygiene cannot ignore them.

There are three aspects of mental hygiene.

1. It is a *science,* a subject matter for study, for observation, investigation and research; for discovery of facts and interpretation of the facts discovered; and for deduction from them of theories, laws, principles.

2. It is an *art* or *practice,* in application of the facts, laws and principles found or enunciated by the science, to human individuals and the various fields of human activity or endeavor.

3. It is a *movement,* an organized effort to promote the science and the art, to spread a knowledge of the facts, laws and principles, to the ends that more human beings may live more efficiently adjusted lives, that fewer may break down, and that those who do may get better care.

On the basis of this biological conception, keeping in mind these several points that have to be considered, we may summarize and say that ***mental hygiene*** **is** ***a science, an art, and a movement devoted*** **(a)** ***to the promotion of the best endowment with, and***

[*] Good is here used in a biological, not ethical or religious sense. The biologically good rat is the one that can find its way to the best food supply and avoid the traps and poisons set out for him. From the human point of view he steals and is sly. He is humanly bad, but rodently good. He leads a successful rat life. But in human affairs the biologically good is usually also the morally good.

development, preservation and use of the mind, i. e., the mental capacities, tendencies, and activities which are involved in efficient human living; (b) to prevention of the impairment of these capacities; (c) to their restoration if impaired; (d) to development of compensatory capacities if restoration is impossible; and (e) to securing the most favorable conditions for the handicapped during the period of incapacity.

The following outline is an expansion of the implications of this definition. It has grown out of, and been elaborated from, a series of talks given to successive classes of nurses in training. It is a mere sketch or framework, an outline, without elaboration of details or citation of references. No new facts are presented, but only a new order of presentation, and a few different interpretations, the logical outcome of the biological viewpoint.

II. Mental Hygiene as Science.

Mental hygiene as science deals with questions of the environments to which we must adjust ourselves and of our minds by means of which we make our adjustments. It considers what our minds are; how we get them; how they develop; what we are who have them; what we do with them; faulty uses we normals may make of them; various factors, external or internal, that may help or hinder us; ways of promoting the helpful ones; the effects and prevention of harmful factors and compensation for harmful effects. It may enunciate a body of laws and principles derived from all these studies.

A. Environments.—We must know environments because (1) they have largely determined what structures and capacities have been evolved in us (*e. g.*, there is light, hence the eye and capacity to see, etc.); (2) they affect us, *i. e.*, they present conditions which act upon us (*e. g.*, threaten danger), and affect our condition (*e. g.*, climate, infections, etc.); and (3) we must react, adjust ourselves to them (*e. g.*, behavior).

The *elements* of environments are (a) the *energies*, forces, of nature (*e. g.*, light-waves, gravity, etc.) which we sense directly or indirectly; (b) *concrete* or tangible *things*, objects, of almost infinite variety (*e. g.*, clothes, automobiles, persons, streets, hills, places, etc.), which we perceive; and (c) *intangible* or abstract

things, of almost equally great variety, which we take in mentally or apprehend. Of these intangibles there are two great groups, (1) ideas, affective states, manner, behavior, of persons; rules, regulations, laws, etc.; and (2) *relations* between and among the foregoing. Relations, again, are of innumerable kinds—of time, space, etc.; of inherence or belongingness (*e. g.,* part-whole, thing-kind, etc.); of necessity (*e. g.,* cause and effect, conditions), law; of purpose (end and means, structure and function); of ethics (rights and duties); etc., etc. There are social (citizen-community, husband-wife, etc.), economic (debtor-creditor, etc.), industrial (employer-employee etc.) and many other relations. Some are essential or permanent (*e. g.,* parent-offspring), others are non-essential, contingent, accidental, or temporary (*e. g.,* debtor-creditor, etc.).

The above elements never occur alone, but are combined in various and varying amounts, degrees, durations, and ways in *situations* and *events* (*e. g.,* the child in school is in a situation, of which most of the elements do not need to be elaborated here). Some elements (*e. g.,* the rules and regulations, the attitudes of the teacher and of the other children, etc.) have considerably more significance for, or effect upon, him than other elements (*e. g.,* the color of the blackboard, etc.). If a child whispers to him, or if the teacher criticizes him, these acts constitute *changes* in some of the elements of his situation, which may or may not be significant or important for him. If important, we may call the happening an *event;* if not important, it hardly reaches that dignity.

Events of greater or less importance occur frequently; situations are constantly changing in respect to one element or another, of greater or less significance. The environment is never exactly the same in all respects for any two persons, nor for any two consecutive moments for the same person. Each person is at the center of his own environment, and is a part of it. It extends into all his past and all his future.

Thus there is an infinite variety of situations or environments. They defy classification or ready grouping. Some are easy and pleasant to adjust one's self to, others hard, disagreeable, even "intolerable." Among the hard or disagreeable ones are situations fraught with danger, risk, or responsibility. But more important from the mental hygiene point of view are those in which the

person is faced by the fact of handicaps or inadequacies in himself; or by an adverse comparison of himself with others; or by past failures on his part to make good adjustments; or by difficulty in determining what course of conduct is right or best, *i. e.*, which factors of the situation are most important; or by unjust treatment by others; or especially by the necessity of choosing between desire, self-gratification, personal advantage or relief from difficulties or unpleasantness on the one hand and duty, self-denial, self-control, or acceptance of the unpleasant or inevitable on the other (conflict). Many others are constantly arising.

We incompletely grasp the factors or elements of our successive situations, or our situations as a whole. The better we do it, and the better we react to them, so much the better are we biologically.

Mental hygiene as science needs to study the nature and effects of environments, and the ways of securing the best ones.

B. What are our minds?—Certain capacities, tendencies, activities, and their records in us.

The answers given to this question by investigators differ widely, even fundamentally. Common usage varies even more. Without discussing others I suggest the following considerations, tentatively.

We as humans are *capable* of doing certain things, such as craving, sensing, thinking, feeling, etc. We have *tendencies* to use these abilities, and *do use* them, in adjusting ourselves to our environments. They are our internal self-directing capacities and activities, which result in our behavior. Though they do not conflict with the laws governing physiological action, and though they cannot take place without the occurrence of many physiological activities, those laws do not wholly explain them; the activities occur according to special kinds of laws which most of us call psychological, as distinguished from physiological. These capacities, tendencies, and activities are included in the term, mind.

All these activities make in us impressions or records, as the contents of our experiences, which are more or less permanent, some of which we can recall, some not. These records are also included in the term, mind. Mind implies *activity* as well as capacity for activity—it is dynamic. It is more than "states of consciousness."

For man at least these capacities and activities fall into five great groups, each with many divisions and subdivisions. For purposes of description they have to be recounted separately, but in actual living they always occur in combination. In any given sample of behavior, or in any given experience, some will play a larger part than others, but all take part. They are as follows:

1. The *driving forces* of our lives:

a. The most fundamental and primitive, found in all living creatures, are the *drives* or *urges* (a) to be, to exist (to make and repair one's self), (b) to be active (to use one's structures and abilities as they develop (*e. g.*, muscles, in muscular contraction, coordinated movements, skill in games and handicrafts), (c) to live (to make one's own adjustments, to be independent, to be biologically efficient or successful).

b. These and other mental activities are coordinated into *instincts, i. e.*, tendencies to use the inherited structures in the ancestral way. The chief ones are (a) the acquisitive (to get food, later other things one wants, wealth, knowledge, etc.); (b) the self-protective (to resist attack, to escape danger, etc.); (c) sex (to seek a mate, beget and rear young, establish a home, etc.).

c. A third group is made up of the *desires* and *wishes,* (a) to get relief from discomfort (as of hunger, bowel and bladder tensions, pain, disagreeable emotions, difficult situations, etc.); (b) to avoid impending discomforts (as of criticism, adverse public opinion, feelings of inferiority, etc.); (c) to secure positive pleasure, enjoyment, agreeable emotions (as of gratifications of sex and other appetites, self-approval, approval of others, etc.); and other desires.

2. The *receptive capacities and activities,* by which we learn of ourselves and our environments. These are (a) sensing, (b) perceiving, and (c) "taking in mentally," apprehending, (i) external things (*i. e.*, modes of energy, objects—including the external parts of our own bodies,—relations between and among objects, places, conditions, situations and events, including behavior and attitude of other persons) and (ii) internal things (*i. e.*, our various bodily sensations—muscle-tonus, visceral tensions, position of limbs, etc.—and our various thoughts and feelings so far as they are objects of observation in us).

3. The *internal elaborating* or *thinking capacities and activities,* by which, under the impetus of our drives, instincts and desires, we *use* the material supplied us by our receptive and other activities in *thinking* about ourselves, our environments and their various elements, and about our relations and adjustments to them. They are *intellectual,* or *ideational,* and include (a) recalling past impressions, sensory, ideational, affective, behavioristic, conative; (b) associating past impressions with present ones or with each other; (c) symbolizing; (d) forming concepts, abstract ideas, generalizations; (e) comparing impressions, ideas, sensations, etc.; (f) weighing relative values, forming judgments; (g) reasoning, drawing inferences; (h) guessing, theorizing; (i) imagining, forming associations that have not been experienced; (j) expecting, anticipating; (k) dreaming, whether asleep or awake, fantasy; (l) making decisions, choices; (m) forming plans, purposes, resolutions; (n) forming ambitions, ideals; in fact, *thinking* of all kinds, whether voluntary, controlled and directed, or uncontrolled; whether rational or autistic; whether we are aware of it or not; whether "conscious," "sub-conscious," "co-conscious," "fore-conscious" or "unconscious." Combined or associated with the next group of activities, these give us sentiments attitudes, points of view, complexes, prejudices, superstitions, etc.

By these activities we try to understand the environment, and estimate or judge its significance to us as a whole and in its separate elements. The contents or results of these thinking activities are recorded in us as our thoughts, ideas, opinions, beliefs, resolutions, etc., and they enter into the series, trains or chains of activity which result in our conduct or behavior.

4. The *affective* or *emotional capacities and activities,* our internal reactions when we are "affected by" (a) certain bodily conditions, (b) our sensations and thoughts, and recollections of them, or (c) objects, persons, conditions, situations, events, etc.,—that is, our "feelings."

There are many classifications or groupings. The comparatively intense reactions, usually of brief duration, aroused by objects, persons (fear, joy, etc.), by immediate conditions or situations (anger, grief, when the thing the child wants is out of reach, etc.), by events, *i. e.,* change in important factors of the situation (embarrassment, shame when one has done an awkward thing, etc.), by

sensations (enjoyment of warmth, etc.), by thoughts (enjoyment in anticipation of an outing, disgust at thought of some food, etc.), by recollections (amusement at recollection of a comical event, anger, shame, resentment, or satisfaction at recollection of words said to one, etc.), etc., are usually classed as *emotions*. The usually less intense, but longer lasting reactions to remoter, *i. e.*, less immediate, situations (anxiety when one's affairs are going badly, happiness or exhilaration when one is successful, etc.) or by bodily condition (depression in ill-health, etc.), we call *moods*.

Associations of feelings with certain ideas give us *sentiments* (patriotism, honor, etc.) and *affective attitudes* (antagonism, cooperation, pessimism, etc.). But there is no clear line of distinction between feelings, emotions, moods, sentiments.

Emotions form a large and essential part of those related and organized groups of memories, thoughts and experiences which we call complexes. They enter largely into our intellectual attitudes, points of view, prejudices, superstitions, beliefs.

Agreeable emotions are often the goals of desire—we seek those things or situations that will arouse them.

Emotions facilitate or hinder the other types of mental activity, that is, when we feel strongly we can think more easily of subjects in harmony with the emotion and cannot think so readily of subjects not in harmony with it; and similarly of our behavior.

We express them by reflex, involuntary and voluntary motor action and glandular secretions. We can to some extent imitate (acting) or inhibit (self-control) this expression, especially the voluntary components.

5. The *executive capacities and activities*, by which, in our self-direction, we actually put to use our other capacities and perform the various acts of adjustment to the environment, *i. e.*, by which we carry out the plans or purposes we form, or inhibit tendencies to act. Over some activities or tendencies we have little or no conscious, voluntary, or rational control (pupillary, tendon reflexes, etc.); over others we have a little more (automatic, impulsive, habitual, etc.); we have most over those which are voluntary, well-considered, deliberate, rational. We may be persistent, energetic, changeable, weak, etc. These executive powers may be exerted chiefly in the motor field, as stimulating and sustaining motor response (overt acts) or inhibiting it (control of expression of

emotions, etc.); or chiefly in the thinking field, in control and direction of trains of thought (attention, recollecting, comparing, etc.), and associating affects with ideas, experiences, situations, etc. (more or less conscious or voluntary formation of sublimations, compensations, attitudes, sentiments, complexes, inhibitions, suppressions, repressions, etc.).

In the face of events, impelled by our drives, instincts, or desires to *some* action that will bring about situations or experiences causing pleasurable emotions or desirable ends, or that will protect us from such as cause unpleasant or undesirable ones, we more or less clearly, understandingly, and consciously comprehend, choose and plan our behavior and carry out the plan as our actual self-adjustment. We are never aware of all the links in the chain of internal events that results in this outward behavior.

6. The *records* or *impressions* made upon us by all these activities, the "engrams," "psychograms," *memories* of our experiences and their settings. They include the records of our sensory imagery; of our thoughts, ideas, acquired knowledge, beliefs, fancies, etc.; of our "conscious" or "unconscious" motives, purposes, resolutions, ambitions, aims, ideals, etc.; of our "conscious" and "unconscious" wishes, desires, etc.; of our feelings and emotions; of our complexes, attitudes, sentiments; and of our acts or behavior. They are our acquirements.

Some of these we may be able to recall in thinking, and some not. Even those that we cannot recall, as well as those that we can, nevertheless enter as factors—sometimes highly important ones—and form part of the mental mechanisms of behavior. Hence they, as well as the five types of mental capacity or activity already described, are dynamic.

Mental hygiene as science needs to study these capacities, tendencies, activities, and records, and ways of promoting the best combinations of them in actual use.

C. How do we get our minds?—Heredity, experience.

So far as our minds are *capacities* and *tendencies,* they are originally our endowment from heredity. They depend on (a) the form and (b) the condition of the structures involved in mental action, *i. e.,* the nervous systems and all their connections. It is not the structures themselves, but a tendency to develop structures closely resembling the parental ones, that is transmitted by heredity, prob-

ably according to Mendelian principles, through the hypothetical "determiners" latent in the parental chromosomes (and perhaps in the cell-protoplasm) of the fertilized egg-cell. The *quality of the "determiners"* may be somewhat altered in the parents (by alcohol, syphilis, and other known and unknown factors); the *development of the structures* may be altered in the offspring (infection, trauma, etc.). Either alteration may affect the capacities (and hence the activities) dependent on the structures (*e. g.*, quality and strength of drives, etc.; acuity of perception and grasp of situations; intelligence in handling situations; affective responsiveness and lability; persistence and energy in activity, etc.).

So far as our minds are *activities* in the actual use of the structures, they are matters of experience. Like all living creatures we tend to use our structures according to their nature or form. Probably the more closely these resemble the parental ones, the more closely do we tend to use them in the ancestral ways. Hence not only our mental *capacities*, but our *activities* (resulting in our behavior) tend to resemble the parental ways (our attitudes, sentiments, beliefs, habits, customs, etc.). This tendency is likely to be enhanced by many environmental influences in the home and the community. But it is only a *tendency;* there is room for much variation in actual use, on account of environmental influences, personal experiences, and changes in condition of the structures. Hence they may resemble or may differ widely from parental ways.

So far as our minds are *records* or *impressions* of our experiences (complexes, memories, etc.), they are wholly experiential, individual, personal. They cannot be inherited. They depend on ourselves and our environments. The man with a "well-stored mind" has *acquired* his stores by the actual *use* of his *inherited capacities* and of his successive *acquirements.* The *ability to recall experiences* is partly inherited, partly influenced by bodily and other conditions (fatigue, hysteria, senility, etc.).

Mental hygiene as science considers the effects of eugenics on inheritance of mental capacity, and the effects of environmental conditions on development of mental activities and memories.

D. How do our minds develop?—As our bodies develop from the fertilized ovum through stages which schematically reproduce earlier stages in evolution, so the mental development of the human individual goes through stages schematically suggestive of adult

attainments of remote ancestral forms. The capacity for anger and fear we undoubtedly inherit from pre-mammalian times; the mind of the civilized child bears likenesses to that of adults of primitive human stocks.

The *biological goal* of our mental developments, already under way at birth, is the attainment of all the diverse capacities and acquirements which are necessary to fit us to live independent, efficient lives in association with our fellows, to mate successfully, and to rear healthy offspring throughout the period of their dependence on us, their parents.

Capacity to direct motor activity grows from the few instinctive acts—sucking, crying, etc.—and uncoordinated movements of the infant through the larger coordinated movements of active games and plays in childhood, to the finer coordinations of penmanship, typewriting and the skilled manual occupations of adult life.

Sensory capacity passes by progressive differentiations from the crude sensations of the infant to light, noise, pressure, etc., to the adult's ability to distinguish fine distinctions of light, color, form (facial expressions of other persons, etc.), sound (music, shades of intonation of the speaking voice, etc.) and other environmental forces.

Other receptive activities lead from the ignorance of infancy through the gradual acquisition of knowledge, first of simple concrete objects in the environment in early childhood, and of relationships in and among them in later childhood, to that of abstract laws, reasons, principles in youth and adult life.

Thinking capacities develop from practically nil in the new-born infant, through the concrete, literal thinking of childhood to the abstract thinking and comprehension of reality of the adult; through the fantasy and "pretends" of childhood, and the romantic idealism of youth to the practical common sense of the adult; through the present-thinking of childhood to the foresight and planning of the adult; through the identification of self with the environment from early infancy and attribution of human powers to objects in the environment in childhood, to complete differentiation of self in adult life, etc.

Affectivity evolves from the few emotions of grief, anger, enjoyment of comfort in early infancy, through successive sub-divisions in childhood, to the many shades of emotional response seen in the refined sensibilities of the civilized adult.

The *executive powers* progress from the impulsive-instinctive type in infancy through the largely emotionally motivated activities of childhood to the more rationally directed self-control of the adult.

The *accumulations of experience* throughout life lead to changes in knowledge, in desires, in attitudes, in sentiments, in complexes.

By the use of these developing capacities the individual grows from complete dependence, through partial dependence, to complete independence; from utter selfishness, egoism, "narcissism," through extension of love-object to parents, to adult sex-interests and sublimations.

In the later years of life there is a lessening of some of the capacities, though a continued addition to experiences.

Some of the capacities and acquirements can be crudely measured and their developmental stage roughly determined by special tests (tests of intelligence, performance, school progress, etc.). All need much further study. Mental hygiene as science is interested in such study.

E. What are we who have minds?—Personality.

Each of us has derived from his ancestors a structure somewhat different from that of anyone else, and he tends to use it somewhat differently; his capacities are somewhat different; they are developed to different degrees. His experiences in life, and hence the records—"engrams," memories—made in him are different, as are his ways of using them; hence his complexes, desires, and motives are different. He has somewhat different knowledge and beliefs, has formed somewhat different associations, attitudes, prejudices, ambitions, purposes, ideals, habits, etc.

Thus each person is a unique combination of capacities, tendencies, and acquirements, some derived from his ancestry, some acquired by himself. It is difficult to determine which are derived, which acquired. They make up his traits, temperament, disposition, character, *personality*.

The importance of individual personality studies is well recognized. Several schemata have been devised (Hoch and Amsden, Wells, etc.). One might be based on the nature or quality, and the degree or amount of development, of the types of mental capacity, activity, and acquirements already outlined, and the tendencies to use, or ways of using, them.

Thus of the *driving forces,* the love of life may be strong or weak; the instinct for sex gratification may be strong or weak; the desire for other pleasures may be strong or weak; etc., and each independently of the others. Of the *receptive* capacities, one sense (as vision) may be good, another (hearing) may be poor; perception of concrete details of the environment may be good or poor; taking in of the situation as a whole, or of its separate concrete or intangible factors, may be good or poor, etc., and, again, each independently of the others. Of the *thinking* capacities, any may be good or poor, greater or less, as capacity to remember, to form concepts, abstract ideas, etc., to form plans, judgments, to reason, etc. Some are partly, but not wholly dependent on others (*e. g.,* the ability to make effective plans is partly dependent on imagination and judgment). Of the *affective* tendencies, some may be strong, others weak, some greater or less; *e. g.,* the tendency to anger is weak in the placid, strong in the irascible; affective responsiveness to beauty of sound, color or form may be much in one person, little in another; etc. Of the *executive* capacities there is equal diversity, some people being dilatory, others prompt; some self-controlling, others self-indulging; some impulsive, others deliberate; some persistent, others flighty; etc. Of the *acquirements,* the amount of knowledge, the imagery, the beliefs, the fancies, the plans, the purposes, the attitudes, the sentiments, etc., may be biologically and socially good or poor; the experiences and the complexes may be helpful or harmful; etc.

The *uses* we customarily make of our capacities and acquirements are also important elements in the personality—whether or not we use the knowledge, the judgment, the self-control, etc., which we have; our ways of handling our daily tasks and our special complexes, conflicts, and difficult situations (facing squarely or avoiding); etc.

There are a few more or less accurate tests for a few of these traits, but most of them we have to estimate by observation. Much further study is greatly needed.

F. What do we do with our minds?—Adjustments.

To our environment (situation), and every change in it (event) which affects us, we *must* make some adjustment. We cannot avoid it. But we can often choose what adjustments we shall make. Most of them are adapted to ends which we more or less clearly

foresee or intend. All have both (a) internal (mental, physiological, and physical) and (b) external (behavioristic) components. The internal activities determine the external behavior.

(a) The *internal* mental adjustments involve the actual *use* of the types of mental capacity already outlined, namely, those by which we take in the situation or event; understand it; feel its interest or importance to us, the necessity for action on our part, and the desire to act in relation to it; plan the appropriate action; and resolve to carry it out—all of which we do more or less consciously and intentionally (rational voluntary action). They involve also those mechanisms, mostly with a large affective element (attitudes, prejudices, complexes, repressed desires, etc.), of which we may be comparatively little or not at all conscious, but which nevertheless, enter into the chain of events resulting in our behavior. (Handling of conflicts; slips of tongue; flight into illness; various other "freudian" mechanisms; etc.) They include also the various associated memories or memory-images, whether sensory, ideational, affective or conative, which arise in the mind, and also such additions to, or modifications of, our concepts, knowledge or other memories as the experience may contribute to our store of "engrams."

The physiological and physical parts of the internal adjustment comprise the nervous, circulatory, secretory, etc., activities, and the motor reactions which are involved to variable extents in all our behavior.

(b) The *external* adjustments constitute our behavior. The variety ranges from simple reflex response (pupillary change; knee-jerk; salivation; etc.) or a somewhat more complex response (startled jump on hearing unexpected loud sound; tremor, immobility or flight when frightened; etc.), to all the multiform and successive actions involved in meeting the necessity of supporting one's self as an independent human being, with perhaps the obligation to support others, throughout a long series of years (learning and conducting a business, profession or other occupation, etc.).

No act of behavior exists by itself alone or is wholly unrelated to others or to internal adjustments. The relations may be comparatively few and simple (*e. g.,* in coughing, sneezing, etc.), or they may reach far back in time and have innumerable, unsuspected ramifications and complexities (*e. g.,* in choice of career; late

marriage, etc.). Many of the component acts which make up our behavior as a whole are brought about by different mechanisms, many of which are variously characterized as partly or wholly reflex, automatic, instinctive, impulsive, habitual, conditioned, rational, voluntary or involuntary, " conscious " or " unconscious," individual or social, etc., or as combinations of some of them.

When asleep or otherwise idle we are nevertheless mentally active to the extent that we dream or indulge in waking fantasies (day-dreams). The mechanism differs from that of rational purposive thinking in that the successive associations are less determined by logic, reality, or voluntary intentional direction, than by affects, wishes, complexes (autistic thinking). By such mechanisms we often seek to solve problems, fulfill wishes, sublimate desires.

Behavior is seen by others. The mental mechanisms by which it is brought about are not open to direct observation. But mental hygiene as science is concerned with the study of those mechanisms, *i. e.*, of how we use the mental capacities we have.

G. Maladjustments by Normal Persons.—Maladjustments by no means indicate abnormality. We all make them. No one always makes the best adjustments of which he is capable. No one has abilities or acquirements sufficient to enable him to make always the best adjustment which some situation in his life may call for. Man is finite.

All maladjustments are due to failure to use well some capacity or acquirement that is essential to good adjustment. *Normal,* or well, persons maladjust either because they *fail to use* capacities or acquirements that they *have and can use,* or, in comparatively few instances, because the situation calls for more than even the normal person has. *Abnormal, i. e.,* ill or defective, persons maladjust because they *never had,* or for the time being *cannot use,* some essential capacities or acquirements.

We cannot help having the drives, instincts, desires (*e. g.,* strong sex desires), or the emotions (*e. g.,* anger) as driving forces, but we can to a greater or less extent control and direct the ways of gratifying or expressing them. This we do by using our perceiving, thinking, and executive abilities and our experiential acquirements. It is therefore chiefly failure by normal persons to use adequately these types of mental capacity that leads to their maladjustments. (Failures by the abnormal may involve all types. " But that is another story.")

Some maladjustments are biologically disadvantageous to the individual; some are trivial, some serious; some affect others as well as one's self. Failures to use chiefly the *perceptive powers*, powers of observation, may lead, for example, to misreading words, taking the wrong bottle of medicine, the mistakes which one explains by "I didn't notice" or "I didn't know it was loaded," etc. Failures to use the various *thinking capacities* may lead to forgetting (*e. g.*, to mail a letter, keep an appointment, etc.); thoughtless, careless, "didn't stop to think," "lack of foresight" acts (*e. g.*, throw burning match into waste paper basket, etc.); unreasoned, superstitious acts (*e. g.*, declining dinner with thirteen at table, etc.); poorly judged acts (*e. g.*, expecting to cross railway tracks before train, etc.); uncritical acceptance of dogmatic assertions (*e. g.*, acceptance of doctrines of fads and isms, etc.); poor estimate of relative values (*e. g.*, throwing china from burning house, carrying down mattress, etc.); guessing instead of investigating (*e. g.*, breaking through thin ice, etc.); forming and acting on prejudices (*e. g.*, refusal to eat animal foods, etc.); poor self-criticism (*e. g.*, boasting, etc.); and many other inadequate adjustments, including the formation or adoption of all sorts of faulty attitudes (*e. g.*, selfishness, non-conformity to law, anarchy, etc.). Failure to use the *executive abilities* may lead to inefficient working (*e. g.*, dawdling, etc.); ill-controlled or ill-guided desires (*e. g.*, rocking the boat, joy-riding, drinking, etc.); poor control of expression of emotion (*e. g.*, slapping the baby in anger, giving way to fear, dislike, etc.); and many other failings.

Some maladjustments may be biologically advantageous, at least temporarily, to the individual, but are socially harmful (*e. g.*, when the hungry man steals food, etc.). Other examples are those of forging, lying, cheating, and other delinquencies that may be committed by normal persons. They result from failure to form or use ideals of conduct wholly within the capacity of the individuals to form and use.

The causes and mental mechanisms which result in all these failures are often very complicated and obscure. Mental hygiene as a science is concerned with them.

H. Helpful Factors.—So much emphasis is laid on faulty reactions and their prevention—because we learn more from a study of them—that comparatively little attention has been given to posi-

tive, constructive factors, except by contrast with harmful ones. It is true that ethical and religious codes have been formulated, discussed and taught all down the ages. But almost until this century the conditions determining, and the mental mechanisms involved in, good conduct (biologically as well as religiously or ethically good) have been largely ignored.

For the good mental health, and consequently good self-adjustment, of any individual, the following factors probably contribute largely: (a) good endowment; (b) good health; (c) a good home, with (d) good example set by parents and others, especially during the whole developmental period; (e) good schools; (f) good streets and other neighborhood surroundings; (g) good work-places and working-conditions; (h) good recreation places, *e. g.,* playgrounds, theatres, hotels, etc.; (i) good companions and associates; (j) good employers and other official superiors; (k) good knowledge, information, especially about self, sex, and health; (l) good experiences, *i. e.,* such as do not lead to harmful or distressing complexes; (m) good treatment by others; (n) good habits; (o) good attitudes; (p) good ambitions; (q) good ideals; (r) good purposes; etc.

The mechanisms by which these help need further study.

I. Harmful Factors.—Effects, prevention, compensation.

Though the study of the factors which lead persons to live inefficiently, to make maladjustments, the study of the effects and prevention of these factors, and the study of the treatment of those handicapped by them fall chiefly in the domain of psychiatry, neuropsychiatry, sociology, and criminology, nevertheless mental hygiene, education, and psychology have also to take note of them.

Factors injurious to mental health may be (a) *hereditary,* affecting the endowment with mental capacities, or the endurance, *i. e.,* the capacity to resist the stresses of life. They may be matters of (b) *physical health* (fatigue, infections, affections of nervous system, arteriosclerosis, glandular imbalance, toxic states, etc.). They may be (c) *environmental* conditions, in the home (broken homes, parental over-indulgence or solicitude, etc.); in the school (ill-adapted studies, unsuitable teachers, etc.); in the streets, playgrounds, etc. (bad companions, temptations to steal, etc.); in industry and occupations (contagion from the disgruntled, unjust treatment by others, etc.); etc. They may arise from (d) *special*

events or experiences (sex trauma or other severe affective shock, etc.). They may arise from (e) *previous personal ways* (alcoholic or other self-indulgence, poor habits or attitudes, conflicts, etc.).

The *effects* may be various degrees and manifestations of mental defectiveness, psychopathic personality, constitutional inferiority, psychoses, psychoneuroses, delinquency, prostitution, vagrancy, dependency, general inefficiency, and other individual and social maladjustments of both the normal and the abnormal. Some effects may be temporary, others permanent, some trivial, others important.

Ways of *prevention,* not only of the injurious factors, but of their effects, are to be sought through study of causes, not only in the individual, but in the community, *i. e.,* in study of social and other environments as well as of the individual's adjustments; and through study of the effects of preventive measures already put in force, including legislative, educational, segregational, etc.

Treatment belongs to the clinical disciplines—psychiatry, sociology, criminology, etc. At its best it seeks to study, analyze and understand the situations and the mechanisms involved, to help the patient or client to understand these situations, himself, the faulty mechanisms or adjustments he has been using, and the better ones that he can use. And it seeks to help him to make substitutions of things he can do for things he cannot or should not do, to find compensations for handicaps, and to sublimate his non-gratifiable desires.

Mental hygiene as science is concerned with the study of the extent and incidence in the community both of the causes and their effects (hence surveys and statistics); with the study of ways of preventing both; and with study of the mechanisms and ways of compensations and sublimations.

III. Mental Hygiene as Art or Practice.

Mental hygiene as an art or practice deals with the application of the facts and principles learned from the science to the actual concrete problems of living. They are applicable to or by (a) *institutions* or organizations for special fields of human activity, and (b) *persons,* individually or as classes. While certain general principles apply to all, each group has its special needs or opportunities.

A. Institutions or Organizations.—Mental hygiene needs to be, and to some extent is, applied in or to:

(a) The *home,* to secure good attitudes, examples, atmosphere, etc., for both adults and children (through school, clinics, various social agencies, etc.).

(b) The *school,* to secure good health conditions, understanding by teachers of pupils' personality needs, studies adapted to each pupil's needs and abilities, etc. (through mental hygiene knowledge, tests, special classes, etc.).

(c) *Industry,* to secure good health conditions, harmonious relations between management and employees and among employees, work and workers fitted to each other, understanding for and consideration of the misfit (through job-analysis, test of ability, mental clinic, social work, etc.).

(d) The *courts,* juvenile and adult, to secure better understanding by all court officers of the mental, personal, social and other environmental factors in delinquency and crime, better consideration of individual needs and of the probable effects of punitive measures (through psychiatric clinics, social work, etc.).

(e) *Penal* and reformatory institutions, to secure better knowledge by all officials of the individual needs of inmates, better attitudes toward them, better classification, employment and segregation, etc. (through psychiatric examinations and clinics, proper industries, etc.).

(f) *Hospitals,* general and special, *almshouses, orphanages,* etc., to secure a favorable mental atmosphere, promote self-respect and self-confidence in the inmates, to develop the best adjustments of which they are capable, etc. (through enlightenment of managers and officers, occupations, habit training, psychiatric and social work, etc.).

(g) The *church,* to secure elimination from its forms and teachings of the mentally unhygienic concepts of original sin and "no health in us," passages of revenge, hate and intolerance in Psalms, etc. (through education of clergy in mental hygiene, etc.).

(h) Peoples and *nations,* to secure lessening of race conceits, prejudices, antagonisms, jealousies, injustices, and desires for revenge, in order that they may understand each other better, and thus lessen the liability for wars (through gradual enlightenment of educators, editors, popular leaders, politicians, etc., in the

social and psychological values and dangers of the mental attitudes of groups, etc.).

B. Persons.—Mental hygiene principles need to be applied by or to:

(a) *Parents,* that they may make good homes, set good examples, wisely guide the development of their children, and avoid injudicious ways and words with them.

(b) *Children,* that they may form the best habits, attitudes, and aims, learn self-understanding and self-control, and acquire such knowledge and the ability to use it as will enable them to handle their internal conflicts and adjust themselves well to the conditions of life.

(c) *Teachers,* that they may live their own lives efficiently, understand children, adapt studies to each child's needs, and develop the best methods of teaching.

(d) *Employers* and *managers* of workers, that they may develop favorable conditions for work and workers, and adopt good attitudes towards workers.

(e) *Employees,* that they may be better adjusted to their work, and develop better attitudes toward their work, each other, and their employers and other official superiors.

(f) *Physicians,* that they may understand better the mental factors in their patients' illnesses, recognize the beginnings of mental illness, and advise patients more wisely.

(g) *Clergymen,* that they may better understand the consequences of marital incompatibilities (sexual and temperamental) in the couples they contemplate joining in marriage, distinguish between sinfulness and illness or other condition in the self-accusations or other mental or social maladaptations of some of their parishioners, and not undertake any but "moral" or "spiritual" healing without medical direction.

(h) *Judges,* that they may have better understanding of the mental and social factors in delinquency and crime and the reform of delinquents, know the aid mental clinics can give them, and understand the use of expert testimony.

(i) The *public in general,* that it may take interest in, use, and support measures for the promotion of mental health, take a more hopeful and understanding attitude toward the mentally ill, and support measures and institutions for the better study and care of mental patients and other poorly adjusted persons.

IV. Mental Hygiene as a Movement.

Mental hygiene as an organized movement to accomplish definite aims may be considered as to its (a) origin, (b) aims, (c) development, (d) methods, (e) accomplishments, and (f) future.

A. Origin.—Early in this century sociology was emphasizing the responsibility of society for many adaptive failures of individuals; psychology was beginning to call attention to individual differences in intelligence; Freud and his disciples and others were bringing to notice dynamic factors previously ignored in individual behavior; and psychiatrists had long felt the need of improvements in the care of mental patients, but did not have an informed public back of them. These and other conditions entered into a situation which made it possible for Mr. Beers, with his book, "A Mind That Found Itself," his interest, his persistence, and his enthusiasm to start the movement in 1907-8. Having interested persons influential in different fields, and having adopted sound advice given him by Dr. Meyer and other prominent psychiatrists, he organized the Connecticut Mental Hygiene Society in 1908, and was largely instrumental in founding the National Committee for Mental Hygiene in 1909. It would not have been started but for his activity. Thus originated the movement.

B. Aims.—(1) The aims of the *National Committee* are (a) "to serve as a clearing-house for the nation on the subject of mental health, the prevention of nervous and mental disorders, the care and treatment of the insane"; and (b) "to serve as a coordinating agency for all state and local agencies interested in these problems." It aims to protect the mental health of the public; to raise the standards of care of mental patients in or out of hospitals; to promote the study and diffuse the knowledge of mental disorders, their causes, treatment and prevention; to gather data as to conditions and methods of dealing with mental disorders; to enlist Federal cooperation; to stimulate and help in organization of independent state and other local societies.

(2) The aims of *local societies* differ. In general they are (a) to enlighten the public and improve its attitude toward, and the laws relative to, mental patients, their ills and their care, (b) to establish, or encourage the establishment of, mental clinics, and (c) to introduce the study and practice of mental hygiene into schools of all kinds, from kindergarten to post-graduate professional schools, and into industry.

C. Development.—From the one state society and the National Committee in 1909, the organizations have grown in number to 22 state societies or committees, some with local branches within the state, and nine national organizations in this hemisphere, Europe, and Africa. Other countries are showing interest.

D. Methods.—(1) The National Committee conducts surveys; makes reports and recommendations based on them to State authorities; gathers and promotes uniformity of statistics; maintains a library, publishes a quarterly journal "Mental Hygiene," and a monthly "Bulletin," distributes literature; gives addresses, conducts exhibits, holds conventions; conducts courses in mental hygiene in schools for social service, etc.; stimulates, and aids in, the formation of state and other mental hygiene societies; stimulates the establishment of psychopathic departments in general hospitals connected with medical schools; and conducts demonstration child guidance clinics in different parts of the country.

(2) *Local societies* carry on one or more of the following activities; conduct, or help in the establishment of, mental clinics; publish and distribute bulletins, leaflets, or other published articles; give or direct lectures or courses in mental hygiene in schools and elsewhere; support or promote good, and oppose poor, legislation which has a bearing on mental hygiene interests; cooperate with public schools, schools for social service, nursing, etc., social agencies, and industrial managements, and in general act as clearing houses and sources of information in mental hygiene matters.

E. Accomplishments.—The movement, largely inspired and directed by Dr. Thomas W. Salmon, until recently the director of the National Committee for Mental Hygiene, has aroused a wide-spread interest in, a better understanding of, and a better attitude toward all mental patients and their needs; in many states it has improved the laws relating to them, increased the number of beds and institutions for them, improved the care of them. It has stimulated better teaching of psychiatry in some medical schools, and the teaching of mental hygiene in some colleges and normal schools. It has led to the establishment of many out-patient clinics, and psychiatric clinics in prisons, courts, industrial plants and large business establishments, which have helped thousands to make better self-adjustments. It helped mobilize the psychiatrists of the country for service during the World War, organized the

psychiatric work in Army and Navy, and was the means thereby of saving 72,000 mentally unfit men from military and naval service. It advised the Government as to the needs and care of neuropsychiatric cases after the War. It has shown how to attack many problems of prevention of mental disease, mental defect, delinquency and other forms of social maladjustment. It has made it possible to get more uniform and accurate statistical information relating to mental patients than in any other age or country. It is getting to be a recognized part of hygiene and of the public health movement.

F. Future.—What the mental hygiene organizations can accomplish will depend on the vision of their leaders, the interest they can arouse, the financial backing they can get. Heretofore investigative, corrective and preventive of mental ills, it must in addition become more and more positive and constructive of mental health.

There will be need of nation-wide and local organizations to teach the public about mental hygiene and its applications and to stimulate the public to apply it until all medical schools teach mental hygiene and psychiatry well; until every college, normal school, law school, divinity school, and school of business administration has adequate courses in mental hygiene; until every home and school has learned to apply mental hygiene principles in bringing up and educating children; until every state or lesser community has such adequate facilities—hospitals, wards, schools, colonies, mental clinics, psychiatric social service—as its mentally handicapped members may need for permanent or temporary care or help; until all such agencies, and all others dealing with the maladjusted—courts, relief agencies, jails, prisons, almshouses, homes, etc.—are administered in conformity with the laws of mental hygiene; in a word, until *all* the mental factors involved in our adjustments and maladjustments are understood and adequately considered—and then we shall have reached the millennium!

METHODS EMPLOYED IN THE CONTROL OF STATE HOSPITALS FOR MENTAL PATIENTS.

The Relation of Central Authority to the Local Management.*

By H. W. MITCHELL, M.D., Warren, Pa.

The request from officers of the Association to open a discussion on hospital control was accepted in the hope that sufficient interest might be aroused to call for a more extensive study of the subject by the Association and a formulation of its collective opinion upon measures of so much importance to the conduct of our work. The constant tendency by the various states to invoke legislation for changes in hospital administration shows the difference in opinions that might be expected. Principles of management considered fundamental in one state are completely disregarded in another with the resulting demonstration throughout the country of everything from the best to the worst. A well digested study of the joint opinions and experiences of our members, who are either victims or beneficiaries of some particular system, with recommendations approved by the Association, could not fail to have its influence upon policies of the future.

Any individual attempt to assume the position of arbiter upon these questions would merely serve to demonstrate the folly of too much self-confidence. In this discussion an attempt has been made to secure composite opinions from many sources, and to present them for their constructive value rather than in support or criticism of any particular system. Grateful acknowledgment is made to many unnamed correspondents for their aid so freely given. Probably those whose opinions were thus obtained would be the first to recognize that views formed while part of a system under which they had been connected, either satisfactorily or otherwise, would not be final as to the merit or fault of the system. An impartial and thorough study can alone produce an accurate evaluation in such a complex problem. Unfortunately, no authoritative deduc-

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tions based upon such a general study are available, and if they were no single policy suitable for the needs of all states could be recommended. The requirements of a state with a population of many millions and with dozens of institutions to support is essentially different from that of one with few people and only one or two hospitals. In the former instance, a central body with powers ranging from supervision to complete control either regulates the activities of many trustees and managers, controlling separate hospitals, or directly operates the hospital through its appointed officials. In the many small states no complicated machinery of hospital government is either necessary or advisable. This observation applies particularly to 14 of the 27 states with central boards operating the hospitals and without trustees or managers, for among these states there are none having more than two hospitals, while the majority support only one. In these states a board of control has practically the same functions as the board of trustees in others where such officials exercise full authority in institution management, or in still others where one board of trustees has charge of two hospitals. Thirteen additional states have adopted board of control methods, dispensing with local trustees. Only three of this number conduct more than six hospitals.

Six of the larger states, supporting more patients than all of those so far mentioned, have adopted a paid commission, or board form of management, that is so regulated as to leave varying degrees of control to the local board, while retaining the power of regulating standards and policies of each hospital, and, in some instances, the appointment of personnel, when civil service regulations do not relieve them of this responsibility.

Nine of the states, mostly of average population, have unpaid central boards with limited supervisory powers. In these states the actual hospital management rests with a local board.

Six states have no central organization in charge of hospital matters, but rely entirely upon a board of trustees for each hospital with the exception of one state where the board manages three institutions.

This review briefly summarizes the methods now employed in conducting hospital systems of the various states without attempting any study of the technical details of management or relations with other state departments, questions of importance, which do not come within the scope of our present discussion.

The choice of a system for organization and control in a given state becomes a local matter, finding ultimate expression in legislative enactments that clearly indicate the extent to which public interest and information upon the subject of mental health has been exhibited to the law makers. Legislative action in this, as in other matters, becomes an index of the interest and intelligence of a community and its ethical and cultural development.

In our form of government a political unit, large or small, usually gets the representation and legislation that it deserves. The people make or mar a system, both in its formation and later operation. If any states can be designated as leaving the subject of their mental health practically to the exclusive control of a few political leaders who happen for the moment to be occupying certain state offices, activated by the Jacksonian motto, "To the victor belong the spoils," then we may know the public interest and knowledge in the matter is at a low ebb. Under such control, low per capita costs, appearance of herds and grounds tend to become the criteria by which the service required by patients, their families and the community is measured.

Fortunately, we can offer in evidence the example of other states where stable ideals of medical service have been slowly developing and finding expression in legislation and practice. These may be summarized as follows:

First.—Adoption of comprehensive laws concerning mental health, giving first importance to the medical and humane interests involved.

Second.—Provision in the larger states for a central regulating body, composed of persons chosen with due regard for knowledge of their specific duties.

Third.—Appointments to this body so made that a continuity of policy may be assured regardless of political changes.

Fourth.—Duties so outlined and executed as to stimulate endeavor, competence and reasonably similar standards of medical service throughout the state.

Fifth.—Adequate provision for the support and classification of the mentally disordered, so that both the individual and society may always promptly receive the protection necessary.

Some provision for central control or supervision of these functions is adopted by 42 states. As shown previously, control

methods are largely limited to the states with few institutions, only a few of our larger states having chosen this form of management. Ground for one outstanding criticism of such organization is furnished in those states where the tenure of office ends with each gubernatorial selection and new appointments for most of the hospitals follow. This custom is less easily checked under the full control management and, when followed, inevitably prevents the best development of medical work, while tending to an undesirable connection between politics and hospital management. Mental disease is no respecter of parties. A hospital system that equally serves both parties, and affords grounds for no just criticism from either, is possible only when there is a complete divorce, in all details of management and operation, between the conduct of hospital matters and partisan political activity. The will and capacity to render satisfactory service to the state should determine tenure of office and not fealty to any party or support of this or that candidate for office.

It would seem to be a logical conclusion that medical interests should be controlled by medical men, who should have as associates those who could bring the necessary training and experience to the conduct of non-medical matters of secondary importance. But this principle is almost universally ignored in the legislative provisions of states with a central control policy. It is the rare exception to find any statutory enactment to ensure the influence of a medical spirit in the actions of the board, while the necessity of having special medical training and experience is hardly ever considered an essential for holding office. The following methods of organization are commonly employed:

First.—Appointment by the governor of board members to hold office during his pleasure. No qualification for office designated.

Second.—Similar appointments by the executive for specified terms, with no qualifications designated. Appointments made both with and without advice of the senate.

Third.—Similar appointments with the Governor and ex-officio member exercising power of removal without restriction. No qualifications for office designated.

Fourth.—Formation of boards from certain elected state officials, who during their tenure of office perform other duties. Such boards may make their own rules and regulations.

Fifth.—Sundry other methods of organization with provision for appointment of paid officials in subordinate capacities, but with no provision for the representation of medical interests in the actual control of affairs. In a few instances the members are paid officials, usually with low salaries.

The criticism that such organizations lend themselves to partisan political influences to a degree that renders improbable, if not impossible, the highest type of hospital organization and medical service, seems warranted from a review of the evidence obtainable. Good intentions of officials lacking technical knowledge of the work they are empowered to control do not alone meet requirements.

Six of the states, caring for over 115,000 mental cases, have adopted central forms of hospital administration, varying somewhat in the extent to which they regulate the affairs of a given hospital. In each instance, however, they share in varying degree the power of control with a board of trustees or managers. With only one exception, these states provide for the appointment of psychiatrists as members of the central board, and in several instances it is required that a psychiatrist should be chosen as chairman of the board or commission. These wise statutory provisions ensure expert advice in the consideration of all questions coming before the board.

The degree to which boards thus constituted should relieve the trustees of responsibility for the conduct of hospitals becomes a theme for discussion. In the large states of this group there are many institutions planned to meet the various needs of medical service. The best conduct of such state service would appear to demand the existence of a central, co-ordinating body acting to ensure a reasonable standardization in many features of hospital activities, to establish state-wide policies, formulate legislation relating to mental illness, ensure the equal interpretation and enforcement of existing laws, supervise finances and secure from the legislature the necessary funds for support and extension. The best results appear to follow where the local management is not deprived of all initiative and can exercise a certain degree of autonomy in the conduct of local affairs. Representative citizens will more willingly serve as trustees when their appointment carries with it responsibility and reasonable freedom of action. If

the public is well informed upon the need and opportunities of hospital service and a given hospital has earned a reputation for being well conducted, men and women can easily be induced to undertake its management with ability and sense of responsibility in no respect secondary to that exhibited by the members of a central board. They should be allowed every latitude in the exercise of their functions consistent with the state policy, which, in connection with hospital management, should be supporting and stimulating rather than repressing and burdensome. The co-operative efforts of both central and local officials are necessary for successful operation of work performed under this division of responsibility.

The popularity of this method in the management of hospitals is attested by a consideration of the fact that more than one-half of the mental cases in the United States are maintained under this co-operation in the exercise of authority.

Nine states, providing support for about 25,000 patients leave control of all hospital affairs to the trustees, the central organization, having only a supervisory function. In none of these states is there any provision for the appointment of qualified medical men on the supervisory board. The demand for such service appears to be increasing as the nature of mental disorders becomes more generally understood. It would appear evident that the best service to the state will be rendered by an organization that is most keenly appreciative of the medical needs, to which all other considerations are subordinated.

Under the methods of management discussed, the control of a hospital may rest entirely with a board of trustees, a central board or the responsibility may be divided between them. No adequate study of the comparative medical service that may be developed under the three methods is available. So many factors must be considered that proven superiority could not be attributed solely to the choice of any method. It is altogether probable that good service may be rendered despite an imperfect system, and the opposite result is equally possible.

An exhaustive study upon the fiscal effect of central management, ranging from slight supervision to full central control, was made some years ago by Mr. Henry C. Wright. His report should be studied by everyone interested in hospital management. It rep-

resents painstaking study and intelligent criticism. Many of his conclusions are equally applicable to medical work and hospital financing. In closing his report he states:

> In those institutions which seem to do the best work and seem to care for the inmates most satisfactorily, the superintendent is given, under the general direction of the board of managers, a large degree of liberty with a corresponding responsibility.

While admitting that needs of the states will require different methods of central organization, he submits the outline of a scheme of supervision that in his judgment is designed to secure the following results:

> (a) To eliminate, as far as possible, the likelihood of interference for political purposes.
>
> (b) To retain on the part of a central department control over classes of expenditures subdivided into reasonably small aggregates, without requiring or permitting such a department to control purchases in detail.
>
> (c) To insure, as far as possible, a continuity of policy.
>
> (d) To provide for uniformity in accounting and reporting.
>
> (e) To secure expert advice and action thereon.
>
> (f) Through boards of managers to insure action based on knowledge of local conditions and details; to furnish a check upon central control; to furnish a direct point of contact between the institutions and the general public, and to secure a means of co-operation between the institutions and other social agencies.

Most of us will heartily endorse these recommendations but consider them complete only when medical experts are given their proper recognition in the governing body.

The policy of selecting a representative body of citizens to act as trustees or managers of a hospital, and empowered to exercise full authority in the management of its affairs, was introduced early in the history of hospital development and still remains effective in six states and, with some variations, is employed in maintaining 75 per cent of the mental cases in this country. No other plan of management has been so thoroughly tested. The adoption of radical changes from the custom of years is not necessarily an indication of reform or progress. Time and comparison are needed to demonstrate that desirable results have followed adoption of new methods.

The principles determining satisfactory appointments to central bodies are equally applicable in selecting boards of trustees or

managers. Persons of recognized character and proven ability, blessed with good judgment and a temperament that enables them to work harmoniously with others, must be selected, if the hospital is to be operated efficiently and its reputation for service established. The details of hospital management are so varied that men and women from almost any profession or business will find in the work something that arouses interest and furnishes opportunity for satisfactory service. It is particularly desirable that the board should contain one or more physicians, preferably those who may bring medical and surgical experience helpful to the management and stimulating to the resident physicians. Legal questions are always arising in board matters that require an attorney's judgment. The merchant, clergyman, manufacturer, contractor and persons interested in social work, can all make their contribution. Working together with an assured continuity of policy and reasonable support from the central board they can develop the sort of medical service which the state and community desire and are willing to purchase. The public should be able to learn from trustees and others that even such an impersonal organization as a state hospital cannot render the service needed without adequate financial support and that, honest management and adequate supervision being assumed, this service will bear a direct ratio to the funds provided for its maintenance.

Board members are almost universally appointed by the Governor for a definite term and the responsibility for a wise selection rests upon him. Continuity of service by reappointment during satisfactory performance of duties is the rule in states where the decisions are not influenced by partisan politics. Questions of management may arise in a given hospital that require unusual caution in the exercise of appointing power and special investigation before selection is made. These problems are best settled where the executive can rely upon the advice of the central commission which should be qualified to give the needed aid.

The arrangement of office terms, so that one vacancy in the board must be filled annually, offers the best check to sudden and undesirable breaks in board policy. The functions of trustees, usually defined by statute, are performed under regulations of their own adoption. While these will inevitably show marked differences in minor details there is abundant evidence to show

the necessity of certain principles in their joint action to secure the desired results.

First.—All official acts relating to hospital policy or management should be taken by the board as a whole, and not through the assumption of this power by an individual member. No organization can operate successfully under several masters.

Second.—A superintendent should be chosen as the board executive, the selection being made solely upon questions affecting his merit and ability. Tenure of office should be during the performance of satisfactory service and no longer.

Third.—The superintendent should meet with the board in all its deliberations, not affecting his office, and be considered its expert adviser in hospital management.

Fourth.—All orders to the hospital personnel should be executed by the superintendent, who, in this as in other matters, should be charged with responsibility for enforcing the joint will of the board.

Fifth.—The selection and retirement, for cause, of assistants and employees, when not influenced by civil service regulations, should be made by the superintendent, subject to board approval. No person in any organization can be held responsible for the acts of others when not given this degree of control.

A board that follows these principles continuously will be spared much of the trouble and annoyance that so frequently results from disregarding them.

Apart from duties that must be fulfilled, trustees have ability to mold the sentiment of a community towards its hospital. They serve as a protection against unjust criticism and adjudicate many differences that may arise between public and management.

The public, knowing that several of its respected members from different walks of life are contributing their unpaid service and competent judgment to the conduct of a hospital, will feel a confidence in the institution that can be duplicated in no other manner. This sentiment helps the relatives of patients to bear their burdens with a trust that brings comfort.

The time allowed forbids further enumeration of valuable services that are rendered, but we may surely conclude that, when a hospital conducted under the system now being discussed ren-

ders conspicuous service, the trustees are responsible, for to bring about such a result they must have won the support and good will of the central state authorities; they must have been fortunate in their selection of an executive whom they must have aided and supported for the sole purpose of extending the usefulness of the hospital to the public. And this is the main purpose to be considered by the many governors, state commissions, local boards and hospital staffs, whose joint efforts are required for achievement of the desired result.

DISCUSSION.

DR. COPP.—At one time somewhat remote I had very definite and positive convictions on this subject. My own relations with supervisory boards without direct power to enforce their ideas have always been so pleasant that I have felt for a long time, and now feel, that that is the ideal relationship in regard to matters of this sort. But with longer observation and experience, I have come to the conclusion that there is no one solution of this problem. I think at different times and places and under different conditions that there are different methods to be employed. It seems to me that there are certain principles which we have to keep in mind in determining the particular régime which is applicable in a given situation. We need to encourage the initiative and develop the individuality of our personnel and increase local efficiency in the institutions. Anything that promotes these seems to me in the right direction.

Now we find in our own institution that there must be a head, and in each of its departments there must be a head. It seems to me equally true that in the state board also there must be a head and the power to coordinate. If the relation between the local unit and the control or supervisory unit is elastic, so that the individual is allowed to develop and to attend to details in the matters within his own department, or within his own institution, that we are going to get the best results. I have come to the conclusion that we must join in the movement toward standardization and coordination of all the forces which control economy and efficiency on the business side, as well as the professional side, and that we must seek some elastic relationship which is effective in control in both directions.

DR. BRUSH.—I have been much interested, Mr. President, in what Dr. Mitchell has said. It has been my privilege to work under three kinds of local boards—one the local board of a general hospital, another a local board of a state hospital, and in two instances the local boards of incorporated hospitals. I have never had opportunity to work under a board of central control. I have watched the operations of various boards of central control with more or less interest, and sometimes I have thought of those kind of people who rush in where angels fear to tread. I have seen

heads of central boards who have had absolutely no experience in hospital work, in hospital administration, or in hospital construction or management. I have seen central boards who have had as their heads physicians, in some instances psychiatrists of a kind, in other instances, two that I have in mind, physicians who were surgeons. They had no more training, and until their appointment on these boards no more interest in psychiatry than I have in the Sanskrit tongue. In neither of the two instances in which the surgeons were the heads of the central boards was anything material ever done to advance the general standard of care, management or supervision in the hospitals or the scientific work. The main interest and common inquiry have been far too often, not what can we do to elevate the standard of medical work, but how are you spending your money, where do you buy your coal, how do you appoint your nurses,—not how are they qualified, but how do you appoint them?

In the matter of local boards, my experience has been, on the contrary, rather gratifying. Dr. Mitchell spoke a little while ago of responsibility and power. One of the greatest hospital administrators that I have known once said that responsibility without power was weakness, and at the same time power without responsibility was despotism very often. When it comes to supervision, the question very often arises. "Who shall supervise the supervisors?"

If we can have boards of central control who will awaken in the minds of the physicians and others in the hospital a feeling of respect born of a knowledge that they know what they are talking about, that they learned in the school of experience how to instruct others, then the subordinates will respect that board. If, on the contrary, they realize that the board is simply put there to pay some political debt, or for some other reason apart from the sole good of the hospitals, the obedience which will be given to their orders, the cooperation which will follow their suggestions, will be on one hand half-hearted, and on the other hand lacking very much in respect.

It is a serious question, but I believe most emphatically that if in each state there could be created a central board upon which there were psychiatrists of training and experience in hospital administration born out of service in a hospital, coupled with other members of the board of business ability, the local managers, the medical officers, the other officers of the hospital would work most harmoniously with them, and the best results would follow. I remember once talking with the president of a central board. I made a suggestion in regard to a matter which we were discussing, thinking naturally that I made the suggestion at his request, because he had asked my opinion, but he abruptly turned to me and said, "I do not care a damn for what you say. We are going to do so and so." And they did do so and so, and the result has been that there was a steady decadence in the care and treatment of the insane in that state; there was an accumulation of political workers in places of responsibility, until a few years ago when better ideas prevailed, and then the successor of the successors of this central board had an Herculean task cleaning out the Augean stables.

THE ADMINISTRATIVE PROBLEMS OF THE BOSTON PSYCHOPATHIC HOSPITAL.*

By W. FRANKLIN WOOD, M. D.

The term psychopathic hospital or institute should mean an institution for the care and treatment of all mental disorders in the broadest sense of the term.

There are three main functions of the Boston Psychopathic Hospital:

1. The care and treatment of all forms of mental disease.
2. Clinical instruction to physicians, medical students, nurses, social workers, and laymen, *i. e.*, teaching.
3. Research work.

The organization of the Boston Psychopathic Hospital calls for a relatively large staff for a hospital of 110 beds, as indicated by the following plan:

1. Director.
2. Administrative or Executive Staff:
   - (a) Chief Executive Officer.
   - (b) Two Assistant Executive Officers.
3. Medical Staff:
   - (a) Chief Medical Officer.
   - (b) Two Medical Officers.
   - (c) Four Assistant Medical Officers.
   - (d) Two Medical Internes.
4. Psychology Department:
   - (a) Chief Psychologist.
   - (b) One Psychologist.
   - (c) Two Assistant Psychologists.
5. Biochemical Laboratory:
   - (a) Chief of the Laboratory.
   - (b) Two Laboratory Technicians.
   - (c) Four Student Internes.
6. Pathological Laboratory:
   - (a) One Assistant Pathologist.
   - (b) One Laboratory Technician.

* Read at the eightieth annual meeting of The American Psychiatric Association, Atlantic City, N. J., June 3, 4, 5, 6, 1924.

7. Department of Therapeutic Research:
   (a) Chief of Department.
   (b) One Assistant Physician.
8. The Out-Patient Department:
   (a) Chief of the Out-Patient Department.
   (b) Two Assistant Physicians.
   (c) One Clinic Manager.
9. Social Service Department:
   (a) Head Social Worker.
   (b) Four Social Workers.
10. Occupational Department.
   (a) Head Occupational Therapist.
   (b) One Occupational Therapist.
11. X-Ray Department:
   (a) Roentgenologist.
   (b) One Technician.
12. The Dental Department:
   (a) Dentist.
13. The Consulting Staff:
   Composed of Specialists in the major branches of Medicine and Surgery.
14. The Nursing Department:
   (a) Superintendent of Nurses.
   (b) Assistant Superintendent of Nurses.
   (c) One Chief Supervisor (male).
   (d) Three Supervisors (2 male, 1 female).
   (e) Twelve Head Nurses (male or female).
   (f) Twenty-eight Attendant Nurses (male or female).
   (g) Two Hydrotherapists (1 male, 1 female).
15. The Clerical Department:
   (a) One Chief Clerk and Treasurer.
   (b) One Clerk.
   (c) Two Junior Clerks.
   (d) Seven Stenographers.
   (e) Eight Junior Stenographers.

One sees that this is a large personnel for a 110-bed hospital, but when one considers that the hospital averages over five new

admissions a day, some days as many as fourteen, with an equal number of discharges, the reason for the large personnel begins to appear. It has been very well said that in administrating a hospital of this type one should not consider how few employees one can get along with, but rather how many are absolutely necessary to run the hospital in the *proper* manner.

While there are only 110 beds at the Boston Psychopathic Hospital, more than 2000 cases a year are admitted. This does not include cases admitted from the Department of Therapeutic Research who are hospitalized for a day or two following spinal treatment, nor any of the cases that are brought to the hospital awaiting return to hospitals to which they have been regularly committed, such as elopement cases and cases on visit that have become disturbed. With these added it would swell our statistics to over 3000 a year. During 1923 one of the largest state hospitals of Massachusetts with a population of 2180 admitted 647 patients, another with a population of 2100 admitted 613 patients. It is needless to discuss the amount of time each new case requires in comparison to the care of the chronic cases.

The following is an example of a full day at the Boston Psychopathic Hospital:

Fourteen patients admitted to the institution; 14 patients discharged; some of these going home to relatives and others being sent to the larger state hospitals. Undergraduate teaching on the wards. Formal clinic and staff conferences. Three house patients sent to the operating room for anti-syphilitic treatment. Five patients sent to the operating room for lumbar puncture. Five outpatient cases from the Department of Therapeutic Research admitted to the house to remain over night following their lumbar puncture treatment. Six patients taken to the Dental Department. Three patients taken to the X-Ray Department. Eight patients taken to the operating room for gynecological examination. Visits made by the consulting internist, ophthalmologist, and orthopedist, all seeing different cases. Medical meeting. Six patients transferred from the acute to the convalescent wards. Four patients sent to the Psychological Department for examination. As many of the female patients as possible sent to the occupational room in the morning and to the hydrotherapy room in the afternoon, and vice versa for the male patients.

Patients may be admitted to the Boston Psychopathic Hospital in the same manner as to the other state hospitals. Our admissions, however, differ from the other hospitals in that the majority of cases coming to the Boston Psychopathic Hospital are admitted for 10 days' observation, while the majority of the cases admitted to the other hospitals are regularly committed without any time limit. The 10-day temporary care admission means that the patient must be discharged, committed, or, if not legally insane, put on a voluntary status at the end of 10 days. This necessitates speeding up the work materially. The routine examinations and all special examinations with the necessary consultations must be made and a complete record with recommendations must be ready in from three to five days. This work falls into the hands of the medical staff who give their diagnoses and recommendations to the executive staff, whose duty it then becomes to arrange all details. It is essential that organization and co-operation be developed to the highest degree. After the diagnoses and recommendations have been made the executive staff must acquaint the relatives with the fact that the patient either is well and can go home on a certain day or that the patient is too ill to be discharged and needs further hospital care. The relatives may co-operate in every way. On the other hand they may delay until it is almost impossible to carry out the necessary legal procedures. We shall assume that the relatives are intelligent and understand the conditions as explained by the executive staff and consent to make the application for commitment. The next step is to notify the physician who sent the case to the hospital. He may consent to get another physician and carry out the medical side of the commitment, or if he does not wish to be *annoyed* with these details he will inform the hospital to that effect. The executive staff must then arrange with other physicians to do this work. The physicians notified depend upon the district from which the case comes. When all this has been satisfactorily arranged the committing physicians may disagree with the medical staff and not find the case committable. It is now the duty of the executive staff to dispose of the case in the most logical manner. If the patient is willing he may sign a voluntary paper. If the patient does not agree to this and is sufficiently ill a 35-day temporary commitment may be granted, and if none of these methods is possible the case must be removed inside of the 10-day period.

Perhaps the relatives feel they cannot care for the patient and refuse to take him out. The hospital connot keep him beyond the 10 days, he is not committable and it is not good treatment to turn the case out in the street. All sides have evaded the issue and the executive staff must solve the problem. As a last resort the executive staff may obtain a temporary care paper requesting the superintendent of another state hospital to admit and care for the case for 10 days more. In this additional period the patient may be sufficiently recovered to go home or may show more marked mental symptoms and be committed. Of course this is an exceptional case and fortunately this procedure is not often necessary.

Many of the acute psychoses received from the surrounding general hospitals are in such poor physical condition that it is necessary to commit them directly to the Boston Psychopathic Hospital. After recovery they are discharged, or, if the convalescence is a long one and their physical condition warrants it, a transfer may be arranged through the Department of Mental Diseases to one of the larger state hospitals. With only 110 available beds it is necessary that the executive staff prevent too many committed cases from collecting in the house or soon there would be no room for the daily admissions. A very favorable arrangement is the privilege of requesting that certain selected cases be committed direct to the Boston Psychopathic Hospital for study and treatment. These requests are usually granted by the Department of Mental Diseases provided the relatives have no objection. Many relatives and friends try to have patients remain at the Boston Psychopathic Hospital indefinitely. It is an administrative duty to explain to them why the patient needs hospital care, the advantages of the larger state hospitals over the small institution in the city, and to allay their fears and disprove the many false newspaper reports of abuse, etc. Most of these people know nothing of the large institution except the "yellow journal" reports and the old-fashioned idea of disgrace attached to having a relative in a state hospital. Some people try by political influence to win their point and have their relatives kept at the Boston Psychopathic Hospital. The Department of Mental Diseases fully realizing our problems, aids us greatly in these matters.

A large number of our cases are referred by social agencies and the courts. The reports on these cases must be ready for presenta-

tion, the recommendations made and the cases disposed of within the 10-day period. Outside information is necessary on many cases and the Social Service Department must be sufficiently manned and well organized to handle these cases diplomatically and speedily. Great care must be exercised in the endeavor to obtain all information necessary and in attending to other details that the relatives and family physician do not get the impression that this particular patient is being hustled off to a state hospital prematurely. For instance, at the end of five days a member of the executive staff gently informs a relative that the patient is mentally ill and will need further hospital care. He then endeavors to obtain the consent of the relative to commitment. The frequent reply is—"Well, let's wait and see if the patient is not better by the end of 10 days." Relatives often do not realize that it is then too late for the executive staff to arrange for the commitment in which event they will be obliged to take the patient out of the hospital.

The average work done in the Out-Patient Department for a month consisted of 73 new patients and 95 old patients. The total number of visits made by these 168 patients was 293, which were covered in 26 clinic days. The Out-Patient Clinic is open daily from 9 a. m. to 1 p. m., excepting Sundays and holidays. Patients are referred by different social agencies, courts, schools, the Department of Immigration, other hospitals, physicians, and by relatives and friends Many of the patients discharged from the hospital are cared for in the Out-Patient Department for an indefinite period. It is frequently shown that certain cases treated in the Out-Patient are benefited to such a degree that a hospital residence is unnecessary.

The Out-Patient Department is gradually growing and as its work is more fully recognized in the community. This is demonstrated by the larger number of cases referred by social and health organizations.

The Therapeutic Research Department maintains an out-patient clinic which is of great service to the community. Here cases suffering from syphilis of the nervous system may come for treatment and advice. Through special arrangement with the Department of Mental Diseases any of these patients receiving spinal injections or punctures and needing hospital care for 24 hours, may be taken into the house without any legal formality. While this eliminates

a large amount of clerical work it does cause much ward work such as admission baths, clean linen, etc. None of these cases appear in our statistics, yet probably between 700 and 800 such admissions occur each year. This procedure aids the clinic very materially in handling its patients.

With the large admission rate and many of the cases coming from the general hospitals it is necessary that the consultants be representative men in their specialties, and our equipment be sufficiently complete to meet the requirements. The X-ray Department, laboratories, etc., must be under the direction of component men. The reports received from these departments must be as accurate and as full as can be obtained anywhere in the community.

For example, some of the cases received from the various general hospitals are as follows:

Dr. A. while being treated in a general hospital became angry and excited. He broke a window and destroyed furniture; heard imaginary voices. He was therefore transferred to the Boston Psychopathic Hospital. His heart condition required the same careful nursing and treatment as it did in the general hospital. Our cardiac drugs must be kept off the ward, which adds that amount of time necessary to get them when needed. This disturbed patient had to be carefully treated to avoid sudden death from his heart complication. This case was watched carefully by the consulting internist who directed all treatment. The case improved and returned to the general hospital.

Miss B., a young woman with diabetes, after receiving the diagnosis in a general hospital where she was, became depressed, claimed that worms were devouring her body and attempted suicide. She was transferred to the Boston Psychopathic Hospital. The treatment with insulin, controlled by careful laboratory studies of the blood and urine and the careful regulation of the diet by a trained dietitian, could not be discontinued merely because the patient had developed mental symptoms. In the Boston Psychopathic Hospital the patient is entitled to the same medical attention to basal physical ailments as in a general hospital.

Mrs. C. was admitted on account of a condition of mental depression. The physical symptoms and a study of the blood showed that she was suffering from typhoid fever. The diagnosis was made thanks to the laboratory facilities available. The precautions necessary to avoid the spread of the infection illustrate the demands liable to be made on the nursing personnel, and the necessity of having a nursing personnel with good general training as well as skilled in the special problems of psychiatric nursing.

Miss D. while convalescing in a general hospital from an operation for appendicitis suddenly became excited, screamed loudly, tore open the operative wound, claimed she was blind. She was transferred to the Boston Psychopathic Hospital and on admission she still had a suppurative wound

which required surgical attention. In addition to this local condition the general mental condition of the patient required detailed study and careful management.

Mrs. J., who previously had shown no signs of mental instability, on the day after childbirth became confused and excited and was transferred to the Boston Psychopathic Hospital. There was evidently some infection present. Instead of clearing up rapidly the fever and blood changes persisted for some weeks. The case was followed in detail by the consulting internist and gynecologist. This case later improved physically and was sent to a larger State hospital, where she finally recovered completely.

G. M. suddenly became excited. He had been ill in a general hospital but recovered sufficiently to go home. When he became disturbed and violent he rushed to the window and jumped out. He was brought to the hospital by three police officers. In about three days the patient quieted down sufficiently to have a more thorough examination. It was found by X-ray that the patient had a fractured hip. Here is a married man with a family to support, and the care he receives for that fracture means whether he will be economically as good as before. It is our duty to have our consulting surgeon and orthopedist follow this case along and direct his treatment after setting the leg. He must receive as good surgical care in the Boston Psychopathic Hospital in addition to psychiatric care as he could receive in any general hospital.

One could go on citing many such cases coming in from the general hospitals suffering from pernicious anemia, tumor of the stomach, pneumonia, pellagra, nephritis, rabies, etc., which require special nursing and treatment for their physical disease as well as for their mental symptoms. The resident staff and consulting staff must be able to meet any of these emergencies, and the hospital must provide these men with suitable equipment to obtain the desired results. It is unfair to expect a competent surgeon, orthopedist, otologist, etc., to take the responsibility of caring for cases in a hospital if the hospital does not supply them with the proper materials with which to work, yes, as complete as they receive in any of the other hospitals they attend.

The hospital averages from 10 to 20 acutely ill patients in the house all the time.

The medical staff in available for consultations to other hospitals or general physicians.

All patients discharged, particularly the committed cases, are encouraged to keep in contact with the hospital either through the Out-Patient Department or the respective members of the staff who have handled their case. This is followed out to a large

degree and each member of the staff has from one to five cases coming in to see them every week for private conferences.

Many of the patients and their relatives become acquainted with a state hospital for the first time at the Boston Psychopathic Hospital. Some of these patients must spend the greater part of their remaining days in a state hospital. It is obvious how important it is that every employee including the staff be extremely careful in all their dealings with the patients, their relatives and friends. A misspoken word or an unintentional action may be mistaken and the wrong impression obtained by the family. On the other hand, if everything is made to run smoothly and the family favorably impressed they are more easily handled at the larger institutions later on.

The proximity to the city with good trolley communication means that there are a large number of visitors twice a day. This not only causes a break in the ward routine but requires extra employees to care for the visitors and patients at these times.

The Teaching Function of the Boston Psychopathic Hospital.

This function of the hospital is an important one and requires a great amount of time of the staff and nursing personnel. The cases must be selected, the nurses must be available to accompany the patients to the clinics and seminars, all of which breaks into the regular hospital routine. This can be readily realized when you ladies and gentlemen think of the amount of inconvenience experienced when a medical meeting is held at your institution. We have this sort of inconvenience four or five days every week during the college year. Besides this, graduate and undergraduate students are studying in our wards every day all the year round. This also breaks into the ward routine. These students must be more or less supervised the entire time they are on the wards. The records must be available to the students which necessitates extra work on the part of the clinical office to see that the records are returned and are intact. Not only are the students from the three large medical schools of Boston furnished with clinical material and lectures, but also nurses from the training schools of the general hospitals. Clinics are provided for students from social ser-

vice departments and other educational organizations. The hospital is available to the superintendents of the other state hospitals. They may send the younger members of their staffs for training whenever they so desire. The hospital also furnishes training for social service workers, psychologists and laboratory technicians from the other state hospitals.

Members of our staff aid the Mental Hygiene Society by giving lectures at different gatherings. Our Psychology, Occupational and Social Service departments have students from different schools receiving their practical training at the institution. All this teaching consumes a great deal of time, but the results are most gratifying.

With the school survey carried on in our state the Boston Psychopathic Hospital has taken its district and carried on the work the same as the other state hospitals. It is through this method that the physician, psychologist and social worker can interest the teachers and parents in mental hygiene and thus render a service to the community.

Research Function.

With the clinical material so abundant the Boston Psychopathic Hospital would not be fulfilling its duty if the different departments did not carry on some researches.

The Department of Therapeutic Research has done and is still doing very interesting work in connection with the treatment of syphilitic conditions of the nervous system. They have been working on the headaches following lumbar puncture with the effect of different drugs. What relieves the headache, how it influences the pressure of the spinal fluid, etc. This department has been using tryparsamide in certain groups of cases and careful records have been kept of their results. All this work must be done without neglecting the routine work of the clinic and hospital.

The Psychology Department is devising new methods of examination as well as doing work on the reaction time and reflex actions caused by various stimuli. This work is all recorded by means of the motion picture camera which enables closer observation than any other method.

The Biochemical Laboratory is carrying out some extensive metabolism studies. It was possible for us to set aside a small con-

valescent ward with a separate kitchen and serving room for this purpose. A specially trained dietitian was obtained and a separate personnel with no other duties put in this ward to care for about five or six patients. This required a break of the regular routine relative to supplies, etc. Special food must be ordered, the patients carefully watched and their excreta carefully collected. Competent nurses must do this work so that the results may be depended upon.

The Pathology Department is working on specially interesting cases that have come to autopsy so that the complete record and pathological findings may be available on special cases of mental disease.

The members of the medical staff interest themselves in different problems. The chief medical officer is paying particular attention to endocrine therapy in relation to certain mental disorders. All of his work is in conjunction with careful laboratory and metabolism studies. Other groups are the cases of encephalitis, pellagra, alcoholics acute and chronic, post partum cases and the asocial and conduct disorders seen in young girls from 14 to 20. In this way the enthusiasm and interest of the medical staff is stimulated by work on research problems.

I have purposely refrained from taking up any of the common problems. They are known to us all and the Boston Psychopathic Hospital is not an exception in any way. It has been my desire to show some of the problems that are present at the Boston Psychopathic Hospital which are not commonly found in the larger state hospitals.

HOW TO SECURE PUBLIC SUPPORT OF A STATE HOSPITAL.*

By CHARLES EDWARD THOMPSON, M. D.,
Superintendent, Gardner State Colony, Gardner, Mass.

The knowledge those in a community have of a hospital, especially those hospitals of a special nature, must, of necessity, come either from direct contact with the hospital, or from general information concerning the nature and work of hospitals from such sources of information by which they may be surrounded.

Correct and reliable information must, by the very nature of things, come from those in a position to know, that is, from the hospital staff of employees or from those who have had occasion to come in close contact with them. This contact may be obtained through the need of hospital care, through relatives who may have required it, or from their own personal interest in hospital problems for any given reason.

If one obtains information from personal contact, the information should be correct, although unfortunately this direct information is not always favorable to the hospital. The majority of persons in the community do not receive their information through direct contact, but from others in the community who may know, but the majority do not know. The public press, which is the greatest source of daily information, has in the past viewed, and still continues to view, Psychiatric Hospitals with suspicion and offers news to its readers frequently highly colored and written in a manner to arouse doubt. This undoubtedly is due to the fact that we have not sensed the true situation which is that we have not always been receptive to the reporter, have given out only fragments of news and the reporter has been compelled to obtain such facts as he could elsewhere, frequently from those who know only a part of the facts. We cannot censure the press for printing a part story or perhaps an improperly colored one if it is denied the real and full account of any occurrence. If there is to be any change it can only come from a cordial reception by hospitals of those who obtain the news of the day and by the giving of full

* Read at the eightieth annual meeting of The American Psychiatric Association, Atlantic City, N. J., June 3, 4, 5, 6, 1924.

information whether it be creditable or not. We must not wait to have our hospitals " written up " upon some sensational happening, but rather we should be centers of correct and constructive information. It has been my own policy to give news, any news whatever that may be requested, and while at times I should have preferred not to see certain articles in print, the result unmistakably has been that the reporters know that they can get the facts at the office, that it is not necessary to obtain them elsewhere, so they come where they should come for information. To their great credit may I say that they have invariably shown the greatest courtesy and have been far more helpful than otherwise.

Contact between the management of " General Hospitals " and the community is through the board of managers, physicians widely scattered, affiliated organizations, the Social Service department, and, most important, through the numerous patients who are under care or who have been cured or relieved and returned to their homes. The general hospital usually is compelled to seek the active financial interest of the community and is ever active cultivating friends and donors, and in doing so must present comprehensive statements of results upon which are based their needs.

Hospitals established by states and provinces, and financed by them, are quite apt to be things apart. They are properly or improperly financed by the state governing bodies whose final decision and reasons for that decision are quite likely to be not well understood by the average voter. Central control bodies are confronted by large and increasing requirements of all hospitals and from the total requests presented must make the best selection they can and still keep within the grand total which the governing bodies believe represents an amount the taxpayers will tolerate. Political expediency may enter here and more often than not determines what our requirements must be, not what they actually are. The general public is not and perhaps cannot be easily consulted in such matters and it relies upon its chosen representatives to express its opinions and make its decision. What actually happens is, that the representatives determine rather than express these opinions. From our point of view this removes further than is desirable our contact with the community. A very definite field, therefore, is presented us, one which we have continued to neglect. So long as we remain inactive just so long will people at large remain so, and it is very clearly our duty to see that the taxpayer does under-

stand our work, our equipment, and our needs. The general public never will comprehend our work unless we ourselves see to it that they do. There is no other source for their correct information.

Development of public interest and confidence must in large measure result from the development of a clear conception of a hospital's duty to the public it serves by the hospital staff itself. If a hospital is to obtain the full approval of its community, it must at first merit it by the character of its work, that is, by the standard of its administration and care of its patients. Dissemination of information as to what may be done will not alone bring about the desired result and will not endure unless the hospital be so well administered that its own work will bear scrutiny. Because of the nature of illnesses cared for, the work cannot be measured entirely upon the number of cures reported (a large number cannot, with our present knowledge of mental diseases, be cured) but success must also be judged by the standards of care and methods of alleviation. The community already understands this to a point where elaborate claims are usually discredited.

What are some of the ways by which we can encourage confidence? One of the surest means of developing public confidence is the proper handling of each and every case from the beginning of symptoms of nervous or mental breakdown. In each case it is surprising the number of contacts we may make. Active coöperation brings the hospital staff in direct touch with many people when nervous and mental illness begins and it does not wait until the patient is received at the front door. We then come in contact with relatives, friends and neighbors, usually upon request of the family physician. Our contact with the family physician should be such that he will desire a consultation upon any display of nervous or mental symptoms on the part of his patients, and he will feel free to ask our hospital for immediate assistance from a member of our staff.

Possibly the patient is already in a general hospital. Our contact there should be such that we are always called in doubtful cases. When we are called, in addition to the medical aspect, we are in a position to explain how application for commitment may be made, we may be helpful in making suggestions as to the physician's medical certificate, which suggestions are usually much desired by committing physicians. Frequently the judge who issues the order of commitment desires our opinion and our contact

should be such that he frequently seeks it. Such consultations from every hospital should be free, the point being constantly made that the hospital does not consider that its duty to the community begins and ends at the front door of the hospital, but that it considers its work in the community both before a patient seeks admission and also after discharge from the hospital just as important to the community as actual care while at the hospital.

At the time of admission of a patient to the hospital the kind of reception the patient, relatives, and accompanying officer or matron receives is of utmost importance. It is essential that those who meet visitors or patients be of pleasing personality, quiet, dignified and ready to be helpful and every effort made to make the first impression of the hospital a good one. A poor first impression may eventually be overcome, but it usually takes a long time to do it. There should be no delay in receiving a patient. The waiting room should be comfortable, cheerful, but lacking a hospital atmosphere. The admitting physician should be summoned promptly and his first interest should be to place the patient at ease, avoiding those methods which immediately plunge the patient into the hospital routine. The person accompanying the patient should be present at the physical examination so that conflicting opinions as to the presence of scratches, bruises, etc., found later may not occur. Concerning personal property, the greatest care should be exercised both at time of admission and later. Hard feelings toward the hospital, perhaps passed on to others, may come through the loss of articles of small value but nevertheless valued by the owner.

It is desirable to have a relative or friend accompany the patient to the ward just as they do in general hospitals. If neither relative nor friend is present the hospital's social worker can well lend support and comfort to the patient by her presence. I believe the value of social service within the hospital to be of as great importance as in the community.

Relatives should be encouraged to visit freely if not contraindicated in a given case, and they should be allowed to visit at any time. The attending physician should discuss with the relatives hospital care in general, also the usual procedure in treatment and endeavor thereby to obtain their coöperation. It should be the aim of every hospital that no one should go away dissatisfied. Relatives should be encouraged to see the attending physician at least for the first few visits and should be asked not to obtain information as to

the patient's condition from nurses or other hospital employees for reasons plainly shown. Physicians should receive definite instruction as to their contact with relatives. No physician, no matter how brilliant he or she may be, should be allowed to interview relatives if lacking in judgment, tact, and affability. There should be no limitation as to week day visiting. It may be necessary to limit visiting on Sundays and holidays, but I believe any such limitation is on account of time off of employees. The question arises whether this is proper or desirable. Hospitals are operated for the benefit of patients and the community and not for the convenience of those employed. If free visitation is prevented because of employees, a change in the time schedule should be made. At first thought this may seem difficult, but I believe it is not nearly as difficult as it appears. The simple arrangement of an officer of the day will solve it.

It perhaps goes without saying that the greatest care should be exercised in the handling of cases recently admitted. Frequently they are not talked with in a proper manner and their illness discussed, also many times they are not told of the desire of the physicians and nurses to help them and a coöperative footing is not established at the beginning. It is time well spent if the head nurse and superintendent of nurses spend a considerable amount of time with the recently admitted patient. It is not conducive to a proper relationship if a patient is received in a hardened matter of fact manner as if they were just one more "case." I have had occasions to note that the reception of a patient into a general hospital, particularly into a private ward, is distinctly a different sort of reception than that accorded a patient admitted to a state hospital and there is no good reason why this should be so. In a general hospital the physician, nurse, head nurse, superintendent of nurses, social service worker, librarian, etc., all make it a point to do their part in helping the patient become adjusted to his new environment.

The standard of care during hospital residence should and in most hospitals does fulfill the promises extended upon admission.

Upon discharge, either final or upon visit, it should be explained both to the patient and to the relative that our interest does not cease. The social service worker who should have been in active social relationship with the patient when in the hospital will, if she has established the proper relationship, be welcome to continue her

interest, encouraged to visit and this visiting will establish new contacts with relatives and friends. In certain cases continued oversight in the home by the physician may be desirable. As such contact is made and continued a more friendly spirit will surely result. It will spread in direct relation to the manner in which the individual contact is made. A personal interest is essential, if handled carelessly, inefficiently, or as a required task more harm than good will result. Few families will encourage, tolerate or benefit by contact with a type of social worker who is a combination of physician, nurse, and dictator of family affairs. A hospital would better be without a social worker than to have one of this type.

While the patient is under hospital study and care, the family and committing physician should be encouraged to continue their interest and study. They should be invited to the staff meetings. The summary of staff meeting findings should be mailed them for their information and future guidance. A copy should also be mailed to the committing judge for the same reason and for a completion of his files. This takes but little time, is well worth while, and does much to assist in establishing a favorable contact.

Clinics conducted by the hospital staff in surrounding towns and cities are especially worth while in making new contacts. Study of backward children in the public schools, if carefully done and properly supervised, not only helps the schools but inspires confidence in the hospital. Meetings at the hospital of medical societies are of particular value. It is through the physician in general practice that we can best extend our influence. Through such meetings the general practitioner, usually deficient in a knowledge of nervous and mental diseases, receives instruction and help and there will be noted an ever increasing tendency to turn to the hospital for assistance when needed.

Every opportunity should be embraced to have the general public understand that they are welcome at all times to visit their hospital. It is a prevailing feeling that the hospital for the mentally ill is one of the last places one wishes to visit, but this is in part due to the fact that state hospitals themselves have not in the past encouraged such visits. I would repeat, every opportunity should be embraced to let the community know that it is always welcome and when they do visit attention should be paid them that they may see the hospital as it is that they may go away with a better understanding of hospi-

tal problems and the efforts made to meet them. But even though the public understands that they may visit, few will do so at first unless some special effort is made to draw them. This has been done at the Gardner Colony by holding an Annual Agricultural Fair. This fair was first inaugurated ten years ago and each year there has been held a two day fair, one day for our patients and one day open to the public. This was started as an effort to encourage visitors to come. It has grown each year both in size and in the number attending and although the Colony is situated three miles from any city or town the attendance has grown from a few hundred the first year to thirty-five hundred in 1921, five thousand in 1922, and some over five thousand in 1923. While, as may be easily understood, it is a large undertaking for our employees, it has been attended by the thinking people of the community and has resulted not only in a change of attitude but a quite different conception of a hospital and its work. Beyond this it has resulted in a much closer coöperative spirit among our own people. I may add that this fair is run by the coöperative effort of the employees entirely separate from state finances. From the proceeds the employees have purchased for the patients a hurdy-gurdy, merry-go-round complete with organ, band instruments, and are now purchasing a pipe organ to be installed in our Assembly Building.

Mental Hygiene societies, both National and State, have done more than any other one thing to awaken public interest in the causes of mental disease, standards of care, and the dissemination of information. It is desirable that the closest coöperation exist between our hospitals and the Mental Hygiene movement.

Desiring to obtain the community viewpoint I recently addressed a questionnaire on this subject to twenty-five citizens in various occupations in our community. The replies may be summarized as follows:

> The belief was expressed by all that the standard of care of patients, management and type of employees of first importance.
>
> The belief was expressed by more than half that the policy of encouraging visitation by relatives and the general public at any time of special value.

Then in order came

1. Our Annual Fair.
2. Affiliation with the activities of the city, including church, club, business and social.

3. Clinics and Medical Meetings.
4. Work in the public schools.

One reply from a church pastor contained the following:

"If I had to choose for my church between adequate equipment, strong financial backing and talented leadership, on the one hand, without the good-will of the community, and, on the other hand, the equipment reduced to ashes, the treasury empty and the leaders resigning but with the genuine, gilt-edge 'good-will' of the community, I should choose the latter."

This opinion has a certain application to our hospital work.

To summarize:

Public support may be encouraged by:

Careful selection of and retention of employees.

Maintaining a high standard of care.

Personal contact of employees and officers through their affiliation with town and city activities.

Visiting hours daily for relatives.

Visitation by the public encouraged at all times.

Special functions held for the purpose of attracting the public.

Educational exhibits.

But we must not stop here. We should extend our medical influence by:

Affiliation with "General Hospitals."

Affiliation wherever possible with schools of learning.

Free consultation with general practitioners.

Assisting judges and courts.

Free clinics.

Examination of children in public schools.

Encouraging Mental Hygiene activities, especially by assisting in the development and work of District Societies.

In this day of active interest in health problems, with dissemination of information upon numerous subjects, it is our privilege and special opportunity to acquaint the public with the actual facts relative not only to the causes of nervous and mental diseases but also as to what we are able and willing to do about it.

Upon our own interest and efforts depends the standing of each of our hospitals in its community. We will not obtain community interest and coöperation by simply requesting it, but must work for and, most of all, merit it.

FUNCTIONAL PLANNING OF HOSPITALS FOR MENTAL DISEASE.*

By SULLIVAN W. JONES and HOWARD SCOTT.

When the present state architect took office on March 1, 1923, he was immediately confronted with the necessity of making certain decisions with respect to plans for new buildings then in course of preparation. As these buildings were in every case merely parts of hospitals already designed and in most cases constructed and operating, the decisions seemed clearly to call for consideration of the working relationships between these new buildings and the others constituting the hospital.

In giving consideration to these matters the state architect first discovered that his past experience with the design of general hospitals was of little or no value because those requirements for the treatment and care of the physically sick which are basic in the design of a general hospital are of very minor importance in the design of a hospital for the mentally sick. Certain fundamental differences between the considerations underlying the design of a general hospital and those underlying the design of a hospital for insane became increasingly apparent. For example, the period of patient turn-over in the hospitals for the insane is several years instead of a few weeks as in the case of a general hospital. Here was introduced a consideration of proper care and custody of patients over the long period as entirely separate from considerations of their medical treatment.

It became apparent to the state architect that, after all, these great hospitals for the insane fundamentally are not unlike industrial plants. They are in reality processing materials to produce a certain desired result—or ought to be. A study of the statistics relating to the patient population in the hospitals of the State of New York seemed to fully justify this assumption. The percentages of male and female patients in each of the several hospitals

* Read at the eightieth annual meeting of The American Psychiatric Association. Atlantic City, N. J., June 3, 4, 5, 6, 1924.

are about the same. The ratios of the several classifications of patients to the whole hospital population holds quite consistently throughout. The logical conclusion is that all of the State hospitals should be similar in design if they are to function similarly.

But instead of similarity there was found to be a wide dissimilarity. Inquiry developed wide differences of opinion between the medical superintendents on certain fundamental points affecting plan. There seemed to be no agreement among them as to what might be regarded as standard ratios between patients and utilities, services and accommodations. There developed also differences in regard to such prime questions as how large a hospital should be; whether a few large buildings housing several hundred patients each, or a relatively large number of small units each accommodating a relatively few patients best served the purpose.

There had been no research and no experimentation with a view to making intelligent determinations in regard to any of these matters. Under the circumstances, no one could be sure he was making suitable provisions in the planning of buildings and in grouping them without first securing a considerable amount of operating data.

The state architect concluded that the problem of planning a hospital for the insane must be approached in the same way as the problem of designing the plan for the manufacture of automobiles or shoes or anything else in which materials were processed and fashioned into a pre-determined finished product.

The purpose for which the hospital was to be designed and constructed must first be clearly understood, its functions then defined, suitable facilities for the process assembled and arranged in proper sequence and, finally, the whole clothed in buildings.

In order to make the necessary operating studies, the services of Mr. Howard Scott, consulting engineer, were secured to organize and direct research as a pre-requisite to intelligent determinations with respect to purpose, function and process.

To make perfectly clear what is meant by these terms and as an aid in understanding the full import of the conclusions reached in this paper, it would be well to depart for a moment from the direct consideration of hospital planning and develop the historical background of function and attempt a definition.

The earliest history of man as a gregarious animal shows that certain processes were necessary amongst the individuals of the group in order to maintain life.

It is obvious that the more primitive and more simple group forms naturally had only simple wants, satisfied by comparatively simple processes. It seems probable that in the first collective groupings everyone participated in obtaining the necessary requisites for all.

As the groups became larger it was found that by specialization certain individuals, or small groups within the larger, had peculiar aptitude for the performance of the certain so-called duties. These aptitudes, by training and continued use, furthered the cause of special application to particular processes, satisfying wants or "desired" objectives of the group as a whole.

Finally, at some stage in collective development there arrived that condition wherein the body politic arrogated to itself the allocation of function to particular individuals or sections within the large groupings. In so allocating the want satisfying processes to particular aggregations the processes themselves became the primary causation of specialization in the performance of any given function.

Out of this specialization arose utilitarian forms which in their primitive way were best suited to provide the necessary or desired results. The first thought with such forms is naturally a utilitarian one.

Did it do its work, and, what was it designed for?

These original forms have existed for a great period of time without change except in the purely external or decorative expression.

Co-incident with this development there occurs the survival of those best able to perform a given process or function. The first civilizations of which we have records are representative of such co-incidental development. It is of special significance to note here that in the earliest periods of any civilization those who were elevated to high esteem in the public mind were those who excelled in the performance of some one or more useful functions within the body whole.

For instance, the earliest records in Egyptian history, from the first to the fourth dynasty, contain more favorable mentions of

its citizens who excelled in house building, agriculture, and even in surgery.[1]

Out of this period came outstanding monumental structural achievements—the pyramids, for example, which were purely utilitarian or functional in concept and purpose. Never again in Egyptian history were such colossal things attempted and executed. Even in the time that has intervened between the succeeding dynasty and when Egypt ceased as a civilization under the Roman absorption of the Ptolemies has there been any other structural achievement which has even approached the pyramids in exactitude of design and construction.

The function of the Nile in relation to Egyptian life was so keenly recognized that the recording of its vagarious events from flood tide to low water resulted in the longest unbroken sequence in history.

To say that a mechanism runs does not necessarily mean that it is properly functioning. It is quite possible to drive a Ford car with only two cylinders firing, but it is not operating as a co-ordinated organism. Therefore, it is not functioning. Then, of course, a Ford even functioning in a completely co-ordinated manner will never be anything more than a Ford. That is to say, the initial organic co-ordination may be perfectly synchronized and that organism is therefore said to be functioning properly, but one cannot consider the functioning of any mechanism in life as a separate isolated entity. It functions only in relation to other organisms or mechanisms.

Here enters the second stage of function.

A completely synchronized co-ordinated mechanism may be operating perfectly within the limits of its own design and yet be incorrectly designed in comparison to other mechanisms which function on less energy while yet obtaining greater results.

Technologically, function may be said to rest upon the syntonic synchronism of the movements of mass and energy within a given mechanism so that it operates in conjunction with all relative mechanisms at the highest continuous load factor, or capacity rating.

To illustrate just what that definition means, take the function of the automobile: To begin with the engine, the spark must be

[1] Pirie, History of Egypt.—Mayer.

so timed to synchronize with the valve movement and piston travel as to get the maximum applied energy out of a minimum gas vapor volume of the right mixture. With this accomplished, the engine as an entity may be said to function, but its function is of no utilitarian value until the energy output is transmitted under adequate flow and time control through a further synchronism of transmission, gears and wheels to obtain a maximum tractive effort, expressed in foot pounds. Even then the automobile cannot be said to function until it embodies in its design and structure those features and mechanisms which adapt it to the use for which it was conceived, taking into consideration the character of the road bed over which it must travel. This illustration does not, of course, take into account all other relative mechanisms which are necessarily involved in the complete functional consequence of automotive transportation.

As all the determinants required to obtain such a result are physical quantums, one can safely say that function is purely technological in nature. It is axiomatic that in equating the determinants there cannot be included such subjective realities as personal beliefs and opinions. In any given series there may occur variables; still the variations are dependent on certain constant sequences or cyclic periods. If there exists only a single isolated instance of a phenomenon, the data is insufficient to corelate it with other existing phenomena. The more an action is repetitive the more it becomes subject to a greater human knowledge and to reaching a technological method of determining its time, phase, waves and their resultant action. Once in this stage, the element of guess work and superstition is removed and the percentage of error gradually falls away in direct ratio to the number of probable occurrences.

Primitive life and the life of organized society revolves about function. It is fundamental. Function is the motif in man's first attempts to express himself in his structures. The hunt and other acts of providing sustenance, the aspects of sex life and his beliefs and superstitions growing out of his efforts to explain and interpret functional phenomena, are all expressed in his architectural forms and decorations. Primitive architecture was a striving for functional planning.

When a civilization obtained a greater and greater supply of surplus social energy which it expended in elaborations of expression, the individual sought to satisfy his ego by differentiating his work from the work of others, until architectural creations became almost wholly the expressions of individual conceptions as were and are the purely decorative creations in the fields of sculpture and painting. The significant fact is that the approach to the solution of an architectural problem changed from an impersonal consideration of functional factors to a purely personal pre-conception of the finished structure in terms of traditional forms, mass and color. In the past, architectural forms have been the chief considerations dictating structures. To-day, functional requirements are becoming an all-important consideration. This change is being wrought by the multiplicity of interlocking and interdependent functions and their growing importance in carrying on the life of the community.

If architecture were a scientific process instead of an artistic one, it would proceed to create a structure upon the basis of correlated functions, so provided for that the result would be the greatest ease of operation with the least expenditure of human energy. The external structural form would then be merely clothing for the functions performed therein. Basically, it would be good architecture. The form might then be decorated to suit the fancy and satisfy the ego.

Function being technological in character is forced continually to greater improvement and refinement, but the basic fundamentals once formulated, remain the same, being part of a continuous geometric progression. While on the other hand, traditional architectural forms being but the expression of individuals are subjective realities and therefore incapable of any progression beyond that of simple addition—an arithmetic progression.

It is this scientific approach to the problem of hospital design which we advocate and have referred to as functional planning.

Functional factors once determined in any mechanism provide for continuous growth and expansion as subsequent conditions may require, being limited in scope only by design limitations of the entire mechanism. Fundamentally the design remains unchanged except when the entire function is limited by some new and revolutionary process of obtaining the same results. For instance, the

functional factors, once determined, in hospital operation for the treatment of mental disease, will obtain until that day when civilization no longer produces insanity.

The hospital for the treatment of mental disease may be said to have three main line functions. First, that of rehabilitation, including medical, occupational and recreational therapy; second, the scientific custody of the permanently defective, and third, the utilities required to make the foregoing operative.

These three primary lines of function within the hospital organization may be charted as flow lines and are controlled by the administration and reception units.

The administration may be termed the controlling intelligence, similar in function to the load despatch board of a modern power house, controlling all portions throughout the entire hospital.

The reception unit may be termed the regulating board at the point of introduction of new material. Also through its system of classification, it maintains its resultant loads, proper ratio of diversification according to its unit treatment capacity. The flow line of rehabilitation proceeds therefrom in a straight line to the ultimate end product of the patient re-equipped to enter the world at large. The flow line of scientific custody runs in parallel straight line formation to the ultimate terminal release.

Likewise the utilities must parallel both the preceding functions.

In order to take care of the exigencies of interchange between functions there are a number of cross series connections which will enable the control unit to shift utility factors or material factors in any direction necessary.

The load factor of any given hospital should be its total patient capacity, fluctuating only by reason of variation in its rate of discharge. The rate of incoming material should be regulated by the rate of discharge. We are assuming here that the hospital unit can be continuously operated to a practical capacity or to a load factor of 90 per cent.

The load factor of each function within the hospital mechanism is maintained by the classification control in the reception unit. The total hospital load cannot be increased over that for which the hospital is designed except in definitely known unit capacities. This means that the necessary facilities in each of the three primary functions can only be increased in a definite unit proportional

ratio. Theoretically, this method provides for unit expansion indefinitely, but the size of a given complete hospital, even if there were no technical limitations as to size, would ultimately be limited by the ability of an individual, the administrative head, to control and operate it. As to what the administrative limitation of this method would be, we shall leave to future research.

The minimum limitations in size are much more easily determined. An entire hospital unit cannot be reduced beyond a certain minimum capacity, as the cost of construction and of maintenance per patient, rapidly rises after the size diminishes beyond a given point.

It has been current practice in the past in hospital operation and development, when an increase in capacity became necessary, for the hospital authorities to ask for an increase in the budget to provide for the greater capacity. The request for additional capacity was stated in the monetary addition to the annual budget.

It is unfortunate that past hospital design has been of such a nature that it permitted almost any kind of haphazard increment to be made, depending entirely on the amount of funds that were made available. The decision in the matter of hospital funds, of course, has rested in the hands of those who, while interested, have had no technical basis provided for them for determining how the increase should be made.

In comparison the unit functional method of design disallows any such method of increasing capacity. While the cost of materials and labor may vary from year to year, still the cost of new units can be readily computed by multiplying the unit indexes by current prices.

The increased capacity required would then be stated in unit terms. A request for increase could be cut or reduced only in unit terms, that is to say, if a hospital applied for a three-unit increase, its request could be reduced to a one-unit increase, but not below that.

Functional design, establishing and fixing the unit method of increment and decrease, furnishes the hospital authorities with an unanswerable argument in support of requested appropriations.

What would happen when hospital capacity was increased is best illustrated by taking a hypothetical case. Let us say that 500 beds constituted a minimum size unit and that there becomes

necessary an addition of one unit. There would be a unit addition of 250 horse power to the boiler capacity, of 25 K. V. A. to power, of one washer, one extractor and one dryer to the laundry, and corresponding additions to kitchen. A similar extension in flow lines of rehabilitation and scientific custody, all according to patient ratio, with a unit enlargement of administration and reception. There would be added one attendants' home of 50 and one nurses' home of 25 and accommodations for the additional medical staff. Underground service connections—steam, water, electric, sewer— cannot be multiplied on this unit basis. The first installation must be of sufficient capacity to satisfy ultimate needs. But this introduces no great difficulty or unwarranted expense. The ultimate size of the hospital will be fixed and its growth to that ultimate can be prophesied with exactitude. We will know exactly how extensions are going to take place. Indeed, in the functional plan, they can take place in only one way.

We have laid down a theory which by every test appears to be valid. The question now arises, "How can this theory be applied in practice?" Certain fundamental questions in regard to the function of hospitals for mental disease must be answered.

What is the function of a hospital for mental disease, and what are the processes which should occur within such a hospital to make it function? As was indicated at the outset, there is apparent no real concensus among psychiatrists in regard to these questions. Doubtless the necessary knowledge can be collected, but it must be collected from many sources, some of which lie quite without the familiar sphere of psychiatric knowledge, and here the architect and engineer will play a much more important part than ever before.

It is perhaps a relatively simple matter for the architect to devise more or less suitable structural forms to house the functional processes in a hospital for mental disease. And with the engineer he can plat his flow-lines and adapt their requirements to peculiarities of site and contour. But you can do none of these things until the psychiatrists with the aid of the medical profession as a whole are able to postulate the process to which the material passing through the hospital should be subjected in order to produce the desired result. The architect and engineer are more competent than the psychiatrist to relate the utility function of

the hospital to the rehabilitation and custodial functions and to design the mechanisms for the performance of this function. But here again the utility function, as already indicated, is so closely interrelated with the other two functions that little intelligent progress can be made until the other functions are clearly defined.

The size of the functional unit can only be determined tentatively and the ratios between it and the various utilities and services can only be tried out experimentally until there is in existence more exact knowledge of the functional requirements than is now available.

How completely the three main functions in the hospital are interdependent can be demonstrated by a reference to the general subject of dietetics. We do not need to emphasize the importance of food as a part of both the rehabilitation and custodial functions of the hospital, and yet there appears to be very little scientific knowledge upon the subject. Here is a fruitful field for research.

In one of the large state hospitals it was found that there was a daily accumulation of food garbage amounting to five tons. An examination of this garbage disclosed the fact that it consisted principally of unconsumed cooked foods and that certain foods predominated. Working back from the garbage to the dining room it was found that the cooked foods which were unconsumed were those which were least palatable when cold and that most of the food served to the patients was cold. Obviously there was a fault in the function of the kitchen and dining room which had a far-reaching effect upon the patients in the hospital. They were being fed upon the basis of some diet. Of what value is a dietetic program if the dietitian has so little control that the food on arrival for consumption by the patient is of such an unpalatable nature that the patient refuses it. From this it is apparent that dietetics not only concerns the dietitian but also involves the architect and engineer.

We might cite a number of other instances to prove the present failure to function and the importance of redesign on the basis of function.

These are all large problems which reach far outside of the field of psychiatry. It seems to us that they can be satisfactorily solved only by what might be termed a collective mind, an aggregate

of the psychiatrist, the architect and the engineer through a rather extended period of research and study.

The hospital system in the State of New York should be congratulated on the wisdom of the appropriating authorities of the state in granting this year an allocation of funds sufficient to carry forward for at least one a year a program of extended operating research in the hospitals with a view to the determination of function.

DISCUSSION.

MR. MILLS (State Architect of New Jersey).—I have not prepared any formal discussion of Mr. Jones' paper, but we in New Jersey have been tremendously interested in just the thing about which Mr. Jones has been talking. I feel somewhat like the story I heard of a man who was doing quite a large construction job in New York recently, who engaged some men who knew a great deal more about it than he did, he having been a banker. When the building was nearing completion, he looked it all over and said to a man engaged on the job, "I have been looking this over, and there should be somthing wrong." But, there wasn't.

In developing our recent work in New Jersey, the most important of all has been the development of a new hospital group for mental diseases at Morris Plains. To emphasize what Mr. Jones has said, I did not know anything about the care of mental diseases, but we communicated with Dr. Curry, superintendent of the institution, Dr. Lane, Dr. Hamilton, of New York, and a couple of others. We had them tell us the functions to which the institution was to be put before we ever discussed the architecture. We have discussed the plan for over a year as an entire institution outside of the one we have, and it has only been, I believe, because of the interests that these men, the commissioner, the staff and myself have had that we have ever been able to put the thing in any kind of form. They have contributed all the necessary information as to what should be contained in this institution, such as the reception building, the treatment buildings, the employees' quarters, the staff quarters, and all of the rest. We started out by setting up in our minds the institution as it should be as a whole. After that, we began to discuss individual buildings, and it is, I think, due to just that one thing of the functioning of the whole institution that we have been able to determine it.

I think one thing that Mr. Jones said which impressed me was that we have certain limitations that we must adhere to after the institution is put up. First of all, if we set up in our minds that the institution must be limited to a certain number of people, we can stand to that and get a complete institution put together. After we get the buildings, it may be possible to put a unit on this one building or on another building, but I feel that in the planning of the engineer or the architect, a great deal may be accom-

plished by so designing these buildings that an interior re-arrangement can be accomplished at the least expense. Later, it would be possible to change the interior arrangement, should it become desirable to change those things which might develop over a few years.

Another thing that we have done which is rather unusual, I think, to an architect (of course, our position is different from most architects): I happen to be under the direction of a commissioner and a state board, and I have to take their orders. We have to plan first—maybe that was the reason I went to those doctors—and get the functions right before we talk about architectural treatment. When we agreed upon the plan it was considered time enough to discuss the exterior treatment. In that way we feel if the plan is right, the exterior treatment can be made to fit it.

I think I can offer no more as a contribution, excepting to endorse what Mr. Jones has said. We do say that we have a model down stairs which shows what we have put together with the ideas of these different doctors on functional planning, which we would be glad to have you all see, and which we would like to have your further discussion on.

COMMISSIONER LEWIS (of New Jersey).—I do not know whether I can add anything to the discussion, Mr. President and Mr. Chairman, except to endorse again what Mr. Mills has said and to commend Mr. Jones' paper for its breadth and its fundamental importance. We have a great family in New Jersey, made up of the citizens, the legislature, the State Board of Control, Board of Managers, the executive officers, the physicians in the various institutions, and the central office staff. We are all organized upon a functional basis. We try to give each man his opportunity and his chance, and Mr. Mills is quite correct in saying that the physicians have told us in this planning exactly what they need to get the work done that the state has in mind to get done at Morris Plains.

After that whole program has been worked out in the greatest detail, the architects and the engineers come along and do their part. They have been sitting in all the time. They have made their contribution. And I have held that there is no place in the world for an architect, if he can't perform the function of making a beautiful, serviceable structure after those who are to operate it have determined exactly what they need. I have no sympathy at all with the program which we found, for instance, in Cleveland, Ohio, where they built an old medieval building, where they have a red tile roof, which the citizens playing golf look down upon and admire, but which is undesirable as an infirmary institution.

I trust there will be more consideration given to the functional features of our public institutions, because in the next few years there will probably be three billions of dollars spent upon institutions in the United States.

I am delighted to see the division on administration starting it with this fundamental question. We hope to have the help of the men and women present in offering suggestions upon our model, which is downstairs in this building. We would be glad to have any suggestions. It is not too late to make changes, and we would appreciate your suggestions very much.

DR. HARRIS.—I commend the paper highly and think it has been a very worthy presentation. It is along the lines of progress. Heretofore in the construction of hospitals we have had all kinds of architects, and the architects' ideas have nearly always prevailed over those of the physicians. The physicians have always, so far as I know, attempted to have hospitals built for purposes for which they are intended to be used, but a limited amount of money has been given, and to get any kind of construction we often have to make compromises and while the buildings function fairly well, they do not function as well as they ought to, because of improper arrangement. Now we have an architect who has presented us not only with the theory, but with the condition. He is telling us how to avoid the past mistakes. This is a very great progress. We have gotten beyond the stage of simplification to that of standardization and the standardization as outlined by Mr. Jones is one well worthy of the consideration of all men who are interested in the care and treatment of mental cases.

Mr. Jones mentioned the management of "intake" and "outtake." Of course, he has got to educate the legislature to those ideas. We are fortunate in New York this year to have a program that will be constructive in every respect, but if the legislators do not come to our aid, our theories and our talks about organization, standards and functions will fall to the ground for in order to make the hospital function properly, funds must be given for a proper personnel, as well as for maintenance and upkeep.

I think we are to be congratulated in having Mr. Jones present this paper.

DR. HAMILTON.—As one visits the older institutions of the country he is struck by their considerable similarity in type. The earliest buildings, such as the one at Utica, N. Y., and the oldest one at Staunton, Va., are fairly simple in outline. Those that were erected during the next few decades are compound, having wing after wing added to the central section by means of short connecting corridors. That Dr. Kirkbride's name is associated with this type of building is sufficient evidence of the fact that that distinguished hospital administrator was able through his analysis of the needs of the patients under the régime of his period, and the ratio of personnel to patients, to formulate the correct principles of building for himself and his colleagues. The Kirkbride building was the one that met the needs of the times.

Among the buildings recently erected and under construction at present there is no such uniformity. In fact one may say that there is no uniformity at all, except in the provisions for tuberculous patients. Evidently we are in a period of experimenting. I believe that this is due largely to the fact that our ideas as to adequate personnel have changed. Most hospitals, after an early period of rather liberal support, go through a time when they must cut expenses and make all new construction as cheap as is humanly possible. Then comes a time when again more liberal aid is afforded. No doubt before long the tendency toward standardization will again make itself felt and under the leadership of this organization, or of some of its

strong men, there will again be popularized special types of hospital buildings for different types of cases. Then we shall do more functional planning than has been done.

In all this work, unless the hospital administrator has a close alliance with the architect, both are going to be disappointed. The hospital administrator is going to be disappointed because he will not be able to accomplish with his building what he would like to accomplish, and the architect will be disappointed because his beautiful structure, instead of receiving praise, will receive rather sharp and unfriendly criticism. The abler type of architect is the one who discusses the plans with the person who is to use the building. That type of architect is not the only one in existence. New York State at the present time is fortunate in having that kind of a state architect, and if some other states, which need not be mentioned, would follow suit with architects of that sort, I think a good many more hospitals would be much better off.

Among the questions that should give us concern until we can arrive at a definite conclusion about them are these: First, the size of the reception building; second, determination of what structures should be in fairly close organic relation to the reception hospital; third, the building for the physically ill; fourth, the question as to whether the feeble and infirm should be placed in some proximity to the building for the physically ill, or whether they should be placed off by themselves in some place where they can comfortably rest and die without annoying the healthy; fifth, where to place the disturbed, so that they will be sure of frequent medical visitation and proper oversight, and at the same time be afforded plenty of healthy activities; sixth, where to place the depressed patients; seventh, how to provide for that considerable group of patients who are relatively comfortable in mood, but quite unwilling to employ themselves usefully; eighth, how many kitchens we should have in a hospital of any mentionable size and what methods of distribution of food should be employed.

The better opinions, I believe, are gradually crystallizing, for I see in various hospitals a tendency to revise existing structures and methods, with a view to giving each patient more individual attention and more individual comfort. Hospital administrators should be in a position to insist on having the full cooperation of the architects, and the architects should be in a position to have sufficient appropriations at their disposal, so that the plans that they lay out on the basis of the needs of the patients can be carried through to a successful conclusion. May the day soon come when architects chosen not because of their political affiliations, but because of their professional eminence, shall have this cooperation and support, and shall be in a position to give to the mental patients the things they need for their comfort and care!

MR. SCOTT (in closing).—A human being is a rather peculiar kind of animal. After listening to the discussions I have come to this conclusion, that if the assumptions that have been advanced this afternoon are correct, the average individual would be powerless if you took off his clothes.

Perhaps this is not true, but then again, perhaps it is true. Try, if you can, to imagine a House of Lords perfectly naked. They probably could not function at all. Their functional capacity has become so interconnected with their exterior decoration that one can't separate one from the other. That seems to be our position with regard to buildings. We are thinking about Stein-Block clothes, Arrow collars, Hannan shoes, and yet, apparently, you are physicians and are really concerned with the body. I do not quite understand it. The House of Lords prestige, I think, has gotten us all in the same boat. Clothes do not really matter unless they cover something.

So that, in reality, the building is only the outward apparel. What goes on inside in the organism of the body is what you are vitally concerned with. In the electric power industry there was a theory at one time that everything had to be put under roof and cover, because it was dangerous and because it would not stand the weather. To-day we build the largest transformer stations in the world of 200,000 kilowatts, and we build them without any clothes, perfectly naked, and they in their pristine nudity operate perfectly. Of course you may not be able to do this with hospital patients, but I am only quoting this to show that they can be entirely divorced.

This state hospital building proposition has apparently gotten on everyone's nerves. In reality it is nothing to be concerned about at all. Your building would stand up and you could build it just as well out of pulp or silver. You do not care if a man's skin is brown, provided the organs function. Of course some of us have particular prejudice about color, and the same applies to building. There seems to be an idea that function has something to do with the building. That is what I want to correct. The building is only the dressing. The function is that which goes on inside of it, and it is no more correct to speak of a building as a hospital building or as a house, if they are of the same type of construction. You will fall into identically the same error. You would not go out and dress your bull pup, or dress your automobile the same as you would dress yourself. Because we have clothes, we insist on applying them to anything that operates. We carry on these traditional forms.

There is a point here I want to make before I finish, and that is, in order to carry out the functional plan, much of the existing mechanical equipment within present hospitals has to be re-designed in order that the hospital authorities can operate a hospital on functional lines. The equipment that now exists has grown out of past days when things were done on a craft basis, and that equipment does not have the precision *control*. For instance, you have not any control to-day in your kitchen equipment, in your laundy equipment, and I might go on with ventilating, and so on. If you wish to carry out the functional theory in hospital construction, you have to re-design the mechanism, so that it conforms with and gives the accuracy of control to the administrative head of the hospital.

Proceedings of Societies

AMERICAN PSYCHIATRIC ASSOCIATION

PROCEEDINGS OF THE EIGHTIETH ANNUAL MEETING.

ATLANTIC CITY, N. J., TUESDAY, JUNE 3, 1924.

FIRST SESSION.

The Association convened at 10.30 a. m., in the West Solarium of the Hotel Marlborough-Blenheim and was called to order by the President, Dr. Thomas W. Salmon, of Larchmont, N. Y.

THE PRESIDENT.—It is an honor to announce the opening of the eightieth annual meeting of this Association.

The meeting will open with an invocation by Rev. C. D. Dickinson in the absence of the Rev. Henry Merle Mellen, who is detained by illness.

Addresses of welcome were made by Hon. H. R. Coulomb, Assistant Attorney-General of the State of New Jersey, who represented the Governor of the State; Mr. Ormand Nichols, Secretary to the Mayor of Atlantic City, and Dr. Wells P. Eagleton, President, The Medical Society of New Jersey. The President made fitting responses.

The President announced as the first order of business the report of the Committee on Arrangements.

Dr. Curry, Chairman of the Committee on Arrangements announced:

A meeting of the State Medical Society beginning Thursday at Haddon Hall, to the sessions of which members of the Association would be welcome.

Coupon books are available at the registration desk for each member and guest. Each book contains one coupon for two people for an hour's ride in a wheel chair, one coupon for the Hygeia baths, one coupon for Young's pier and one for the Steel Pier.

Dr. Curry stated that if the ladies desired to have bridge or Mah Jongg parties, they could be arranged by applying at the registration desk.

An invitation was extended to members who were Rotarians to attend the luncheon of the Rotary Club at the Ritz Carlton Hotel at 12.30.

Dr. Curry announced golf for any members wishing to play at the Atlantic City Country Club or the Linwood Country Club, for which arrangements could be made at registration desk.

Dr. Curry extended an invitation from Dr. Cotton of the Trenton State Hospital to attend a demonstration and luncheon at his hospital on Saturday, June 7.

THE PRESIDENT.—Dr. Curry has neglected to state that in the intervals between these various diversions, there will be sessions of The American Psychiatric Association.

The next order of business is the report of the Committee on Program, to be given by Dr. Solomon.

REPORT OF THE PROGRAM COMMITTEE.

The general scheme of the program for this year does not deviate in any essential way from that of last year.

The conflict of dates between The American Psychiatric Association and the American Neurological Association has caused a certain amount of difficulty in the preparation of the program. It seems unfortunate that these two associations should meet on the same day. If arrangements could be worked out so that this would not occur, it would seem to be of mutual advantage to each association.

The Program Committee wishes to call to the attention of the members of the Association, that very few papers have been voluntarily offered in the past years. In an association with a membership of 1100, it would seem that there should be many members desirous of presenting papers to the Association. That material is available is proven by the fact that upon solicitation an excellent group of papers is always forthcoming. The Program Committee would therefore suggest that the members of the Association offer to the program committees of the future material that they feel should be presented. It would be advisable to publish the names and addresses of the program committee in the first issue of THE AMERICAN JOURNAL OF PSYCHIATRY following the appointments in order to enable members of the Society to communicate directly. The Secretary of the Association has been acting in the past as Vice-Chairman of the Program Committee, and will always be in a position to forward communications to the Chairman of the Program Committee.

THE PRESIDENT.—The Association is indebted to Dr. Solomon and his committee for the very fine program they have prepared.

The report of the Program Committee was accepted as read and the recommendations of Dr. Solomon were approved.

THE PRESIDENT.—The next order of business is the Report of the Council to be read by the Secretary, Dr. Haviland.

REPORT OF THE COUNCIL.

Report of Council Meeting held Monday Evening, June 2, 1924.

Dr. Salmon in the Chair.

Present: Dr. Haviland, Secretary-Treasurer; Dr. Clark; Dr. Russell; Dr. Mitchell; Dr. Chapman; Dr. Swint; Dr. Copp; Dr. Abbot; Dr. Devlin; Dr. Barrett; Dr. Ostrander; Dr. Brown; Dr. Kline; Dr. White.

There were also present: Dr. Pilgrim, Dr. Eyman, Dr. Hill, and Dr. Brush, Ex-Presidents, and Dr. Harris and Dr. Forster, Auditors.

The Secretary presented the name of Dr. Horatio M. Pollock, Albany, N. Y., for Honorary Membership, his name having been first presented to the Council at the 1923 meeting and laid over for final action at the 1924 meeting.

The Secretary also presented the names of Sir Frederick W. Mott, London, England, and Messrs. Clifford Whittingham Beers, New York, N. Y., and Everett Sprague Elwood, Philadelphia, Pa., for Honorary Membership. The motion was made and unanimously adopted in the case of each candidate mentioned that the Council recommend to the Association the candidates' election for Honorary Membership.

The Secretary presented the following list of candidates who have applied for Fellowship:

Amos E. Barton, M. D., New York, N. Y.; B. I. Bell, M. D., Williamsburg, Va.; Byron Edward Biggs, M. D., Fort Wayne, Ind.; N. L. Blitzsten, M. D., Chicago, Ill.; Henry A. Bunker, Jr., M. D., New York, N. Y.; Frederic B. M. Cady, M. D., Cambridge, Mass.; Martin G. Carter, M. D., Los Angeles, Cal.; Malcolm Dexter Clayton, M. D., Covington, Ky.; Geo. Mitchell Eckel, M. D., Hot Springs National Park, Ark.; Frederic J. Farnell, M. D., Providence, R. I.; Robert D. Gillespie, M. D., Baltimore, Md.; Wm. J. Hammond, M. D., Westwood, Mass.; Leonard Harrington, M. D., Kansas City, Mo.; Henry Richard Humphries, M. D., Mamaroneck, N. Y.; Augustus S. Knight, M. D., Gladstone, N. J.; David Livingstone, M. D., Fort Steilacoom, Wash.; Elizabeth Spencer McCall, Bryn Mawr, Pa.; Hermon S. Major, M. D., Kansas City, Mo.; John A. P. Millet, M. D., Stockbridge, Mass.; George L. Mosby, M. D., Chicago, Ill.; Anita Mary Mühl, M. D., Washington, D. C.; Thomas F. Neil, M. D., Augusta, Ga.; Roger Edmund Pinkerton, M. D., Cuyahoga Falls, O.; Charles E. Remy, M. D., Yankton, S. C.; Louis F. Ross, M. D., Richmond, Ind.; Walter F. Schaller, M. D., San Francisco, Cal.; Joseph F. Shanahan, M. D., Buffalo, N. Y.; Edwin Rogers Smith, M. D., Indianapolis, Ind.; Philip Smith, M. D., New York, N. Y.; Harry Stack Sullivan, M. D., Towson, Md.; Wm. H. Vorban, M. D., Lima, Ohio.

Final action upon the list of candidates proposed for Fellowship was deferred for one year under the provisions of the constitution.

The Secretary presented the following list of candidates proposed for

Membership, who under the provisions of the constitution are eligible for election this year:

Elizabeth I. Adamson, M. D., Hartsdale, N. Y.; E. H. Alderman, M. D., Williamsburg, Va.; Edward Bartlett Allen, M. D., Ossining, N. Y.; Alexandria Ameer, M. D., Harding, Mass.; Joseph E. Barrett, M. D., Little Rock, Ark.; J. B. Bauguss, M. D., Gulfport, Miss.; Arthur Berkowitz, M. D., Harding, Mass.; Louis J. Bragman, M. D., Kings Park, N. Y.; Henry Clinton Burgess, M. D., Canandaigua, N. Y.; DeWitt C. Burkes, M. D., American Lake, Wash.; Herbert Ezra Chamberlain, M. D., White Plains, N. Y.; Wm. T. Cluney, M. D., Harding, Mass.; Edleston Harvey Cooke, M. D., Ponoka, Alberta; Thomas J. Currie, M. D., Willard, N. Y.; Chas. A. Decary, M. D., Taunton, Mass.; Wm. Dietz, M. D., Greystone Park, N. J.; Julia M. Donahue, M. D., Washington, D. C.; Joseph Donovan, M. D., Greystone Park, N. J.; F. J. Ernest, M. D., American Lake, Wash.; John B. Ferran, Jr., M. D., Binghamton, N. Y.; Theodore R. Ford, M. D., Greystone Park, N. J.; Wm. Chas. Gaebler, M. D., Westborough, Mass.; Theodore Gallup, M. D., Kings Park, N. Y.; Lilian R. Grady, M. D., Ogdensburg, N. Y.; Lee M. Green, M. D., Buffalo, N. Y.; Riley Henry Guthrie, M. D., Little Rock, Ark.; Samuel Brown Hays, M. D., Lakeland, Ky.; Emmett Lorenzo Hooper, M. D., Athens, O.; Clarence Moore Kelley, M. D., Taunton, Mass.; H. J. Kellum, M. D., Palo Alto, Cal.; Paul E. Kubitschek, M. D., Osawatomie, Kans.; Wm. J. Lein, M. D., Greystone Park, N. J.; Louis Frederick LeSoine, M. D., Poughkeepsie, N. Y.; Paul Carroll Lybyer, M. D., Poughkeepsie, N. Y.; I. Herbert MacKinnon, M. D., Chillicothe, O.; Robert Bush McGraw, M. D., White Plains, N. Y.; Lorenz A. Miesch, M. D., Bolivar, Tenn.; Richard T. O'Neil, M. D., Palo Alto, Cal.; Howard K. Petry, M. D., Warren, Pa.; Henry Pfeiffer, M. D., Towson, Md.; Robert H. Rea, M. D., American Lake, Wash.; Evelyn B. Reichenbach, M. D., Rochester, N. Y.; Joseph A. Robinson, M. D., Palo Alto, Cal.; Manly Bronson Root, M. D., Worcester, Mass.; Edward A. Rowland, M. D.; Kings Park, N. Y.; Henry E. St. Antoine, M. D., American Lake, Wash.; Geo. Byron Setzler, M. D., Palo Alto, Cal.; Rudolph J. Shafer, M. D., Kings Park, N. Y.; Francis C. Shaw, M. D., Ogdensburg, N. Y.; John Harley Stamp, Jr., M. D., Philadelphia, Pa.; Neville E. Stewart, M. D., Palo Alto, Cal.; Jesse Brown Swafford, M. D., Bearden, Tenn.; Samuel Tartakoff, M. D., Taunton, Mass.; Louise Ballard Trigg, M. D., Lakeland, Ky.; Hiram Bachelder West, M. D., Lakeland, Ky.; Wm. D. Wheless, M. D., Lakeland, Ky.; John W. Willis, M. D., Palo Alto, Cal.; Vivian S. W. Worden, M. D., Ogdensburg, N. Y.; Edgar C. Yerbury, M. D., Westborough, Mass.; Claude Remell Young, M. D., Binghamton, N. Y.

Motion was made and adopted to recommend to the Association the election of the candidates as read.

The Secretary read the following list of candidates for Fellowship whose applications were first presented last year and laid over for final action this year:

Edmund M. Baehr, M. D., Cincinnati, O.; Everett S. Barr, M. D., Asheville, N. C.; Geo. E. Charlton, M. D., Norfolk, Nebr.; Edwin W. Cooke, M. D., Bolivar, Tenn.; Clyde B. Covey, M. D., Waukesha, Wis.; Thomas K.

Davis, M. D., New York, N. Y.; Geo. Van Ness Dearborn, M. D., Cambridge, Mass.; Wallis W. Durham, M. D., Hopkinsville, Ky.; Clifford B. Farr, M. D., West Philadelphia, Pa.; Laurent Feinier, M. D., Brooklyn, N. Y.; David M. Gardner, M. D., Philadelphia, Pa.; Chas. E. Gibbs, M. D., New York, N. Y.; Margery J. Gilfillan M. D., Battle Creek, Mich.; Mark A. Griffin, M. D., Asheville, N. C.; Wm. R. Griffin, M. D., Asheville, N. C.; D. G. Griffiths, M. D., Lincoln, Nebr.; Rollin V. Hadley, M. D., Westborough, Mass.; Madeleine A. Hallowell, M. D., Atlantic City, N. J.; Edward E. Hicks, M. D., Brooklyn, N. Y.; Frank F. Hutchins, M. D., Indianapolis, Ind.; Mario Julia, M. D., San Juan, Porto Rico; Abraham Kardiner, M. D., New York, N. Y.; Alvin W. Klein, M. D., Stockbridge, Mass.; Philip R. Lehrman, M. D., New York, N. Y.; Michael Paul Lonergan, M. D., New York, N. Y.; Samuel Leopold, M. D., Philadelphia, Pa.; Laurence K. Lunt, M. D., Stockbridge, Mass.; Wm. M. Lynch, M. D., Waymart, Pa.; Archibald McCausland, M. D., Guelph, Ont.; Clinton P. McCord, M. D., Albany, N. Y.; Frederick P. Moore, M. D., Watertown, Mass.; Arthur G. Morphy, M. D., Montreal, Que.; J. D. Mulder, M. D., Grand Rapids, Mich.; Wm. A. Newbold, M. D., Kinston, N. C.; James Harold Parker, M. D., Farmington, Mo.; Wm. L. Patterson, M. D., Fergus Falls, Minn.; Benj. W. Provost, M. D., Leavenworth, Wash.; Eva Rawlings, M. D., Kalamazoo, Mich.; H. A. Reye, M. D., Detroit, Mich.; Austen F. Riggs, M. D., Stockbridge, Mass.; Wm. H. Riley, M. D., Battle Creek, Mich.; Frederick C. Robbins, M. D., Philadelphia, Pa.; Henry W. Rogers, M. D., New York, N. Y.; Amos O. Squires, M. D., Ossining, N. Y.; Samuel J. Stewart, M. D., Beatrice, Nebr.; G. Lane Taneyhill, M. D., Baltimore, Md.; Mesrop A. Tarumianz, M. D., Farnhurst, Del.; Percy R. Vessie, M. D., Helmuth, N. Y.; Raymond G. Wearne, M. D., New York, N. Y.; Stephen S. P. Wetmore, M. D., Easton, Pa.; W. Franklin Wood, M. D., Boston, Mass.

Motion was made and adopted to recommend to the Association the election of the candidates for Fellowship as their names appeared upon the list as read.

The Secretary read the following list of members who applied for transfer to Fellowship:

Edwin W. Allen, M. D., Milledgeville, Ga.; H. D. Allen, Jr., M. D., Milledgeville, Ga.; Buell L. Ashmore, M. D., North Grafton, Mass.; Harold A. Bancroft, M. D., Hartford, Conn.; Richard Binion, M. D., Milledgeville, Ga.; Sidney M. Bunker, M. D., Waverley, Mass.; W. E. Clark, M. D., Fondren, Miss.; C. H. Creed, M. D., Columbus, O.; Neil A. Dayton, M. D., Wrentham, Mass.; Geo. L. Echols, M. D., Milledgeville, Ga.; Miner H. A. Evans, M. D., Boston, Mass.; Paul J. Ewerhardt, M. D., Towson, Md.; Earl Wm. Fuller, M. D., Pennhurst, Pa.; Grace H. Griffin, M. D., Rochester, N. Y.; Thomas J. Heldt, M. D., Detroit, Mich.; Merle Q. Howard, M. D., Wauwatosa, Wis.; W. F. Jamison, M. D., Bradley Beach, N. J.; Benj. F. Johnson, M. D., Fondren, Miss.; Douglas A. Johnson, M. D., Cincinnati, O.; Augustus S. Keefe, M. D., Louisville, Ky.; Otis F. Kelly, M. D., Hathorne, Mass.; David M. Levy, M. D., Chicago, Ill.; Hosea W. McAdoo, M. D.,

Little Rock, Ark.; Harold A. Patterson, M. D., Sonyea, N. Y.; James S. Plant, M. D., Newark, N. J.; Howard W. Potter, M. D., Thiells, N. Y.; Theophile Raphael, M. D., Ann Arbor, Mich.; Richard L. Shea, M. D., Richmond, Ind.; Chas. E. Sisson, M. D., Norwalk, Cal.; Mary E. Slattery, M. D., Philadelphia, Pa.; Groves B. Smith, M. D., Detroit, Mich.; Freeman A. Tower, M. D., Waverley, Mass.; Fletcher J. Van Meter, M. D., Clarinda, Ia.; Geo. B. Wilbur, M. D., South Dennis, Mass.

Motion was made and adopted to recommend to the Association that the transfer of Members to Fellows be made according to the list as read.

The Secretary next read a list of 15 Fellows and 9 Members who are three years in arrears for dues.

The Secretary explained that all such Fellows and Members had been sent three bills and three subsequent letters, but in no case had a reply been received.

Motion was made and adopted that the Fellows and Members whose names appeared upon the list as read, be dropped from the Association.

The Secretary read a list of resignations received during the past year, they being as follows:

Fellows.—Dr. Wm. A. MacIntyre, Dr. P. H. Weeks, Dr. Alfred A. Thurlow, Dr. Harlan P. Mills, Dr. Paul G. Weston, Dr. Fred H. Works, Dr. David Young.

Members.—Dr. Adelaide Ellsworth, Dr. H. Lincoln Chase, Dr. Penelope Flett.

Motion was made and adopted that the resignations submitted be accepted with regret.

The Secretary brought up the question as to the desirability of continuing the Committee on Mental Hygiene. After a discussion which indicated that such committee no longer had a function to perform, motion was made and adopted that the Council recommend to the Association that the Committee on Mental Hygiene be discontinued.

The matter of supplying delinquent Fellows and Members with copies of THE AMERICAN JOURNAL OF PSYCHIATRY was discussed. Motion was made and adopted that the Council recommend to the Association that no members in arrears for dues, should be restored to the subscription list of the JOURNAL until dues are paid and that no back numbers of the JOURNAL should be supplied.

The Secretary read a letter from Mr. John Kinderdine, Extension Manager of The Survey, requesting permission to have a display of publications sold by The Survey, such display to be adjacent to the meeting room of the Association.

Motion was made and adopted that the letter be laid upon the table.

The Secretary read a letter from Dr. Franklin Martin, Chairman, Board of Directors of the Gorgas Memorial Institute, asking the Association to endorse the movement for the Gorgas Memorial.

Motion was made and adopted to refer the matter of Dr. Martin's letter to the Committee on Resolutions, asking the committee to draw up resolutions endorsing the project of the Gorgas Memorial Institute for presentation to the Association.

The Secretary stated that the projection apparatus which he was authorized last year to purchase at a price not to exceed $250 had been purchased and was available for use at this meeting. The cost of the apparatus was $72.15.

The Secretary brought up the need of the Association for a place where records, apparatus, etc., belonging to the Association could be permanently stored. After discussion motion was made and adopted that a committee be appointed by the President to make an inventory of the property of the Association which should be stored and make recommendations to the Council as to the plan of procedure whereby records and other property of the Association may be properly preserved. The President subsequently appointed the following as members of such committee: Marcus A. Curry, M. D., Chairman, Earl D. Bond, M. D., and Ross McC. Chapman, M. D.

The Secretary stated that the Council had approved by correspondence of the designation of Dr. A. T. Hobbs to represent the Association at the annual meeting of the British Medico-Psychological Association which will be held in July, 1924. It was stated that Dr. Hobbs is now enroute to England to attend the meeting.

The Secretary then read the following letters from Dr. Henry M. Hurd and Dr. Eugene Bleuler:

THE SEASIDE INN, SEAL HARBOR, ME., July 4, 1923.

DEAR DR. HAVILAND.—Many thanks for your kind letter of June 30 which has been forwarded to me at Seal Harbor, where I am spending my summer with my daughter. I am deeply touched by your kind references to me and the resolution of the Association. It was a great disappointment that I could not be present at the annual meeting but the state of my health was such I could not make the journey and endure the hardships of an overcrowded city. I appreciate the kind thought of me as shown by the action of the Association.

I am much impressed by the numerous changes in its membership and feel that my old Associates are yielding their positions to younger men.

I thank you and through you the Association for your cordial and sympathetic note. I hope that your new position proves a pleasant one and I congratulate you upon your opportunity to benefit a whole state rather than a single institution.

With cordial remembrances and many thanks,

Sincerely yours,

HENRY M. HURD.

ZURICH, September 12, 1923.

C. Floyd Haviland, M. D., Esq., Secretary-Treasurer, Albany N. Y.

MY DEAR SIR.—I highly appreciate the honor you have shown me by electing me an Honorary Member of The American Psychiatric Association. I beg you to accept my hearty thanks for your great favour. It would be of the highest interest for me to listen once to the discussions in one of your meetings. Unluckily this will hardly be possible, since in June we are in

the very midst of our university-term and in this month I cannot absent myself from Zurich for any length of time.

With the assurance of my high esteem, I am,

Very respectfully yours,
E. BLEULER.

The Secretary stated he had received an acknowledgment with thanks from the Medical Director of the National Committee on Mental Hygiene for the $250 sent him, in accordance with resolution adopted by the Association last year, for the use of the statistical work of the National Committee.

Dr. Brush stated the Association last year authorized the expenditure by the Editor of the JOURNAL of $600 for stenographic and clerical assistance, but he further stated that he had expended less than $100 for such purpose.

Dr. Brush stated that he had succeeded in securing a 10 per cent reduction on the present cost of printing THE AMERICAN JOURNAL OF PSYCHIATRY, to commence with the next volume.

Dr. Pilgrim suggested that an index be made of the volumes of the JOURNAL which have been issued, but no action was taken.

Dr. Harris presented a report as Chairman of the Committee on Sale of Institutional Care of the Insane, total receipts being $32.50, net receipts $29.36. He stated that there remains unsold 280 copies.

Dr. Ostrander suggested that the Association send a note of sympathy to the Secretary of the Interior, who is a former President of the Association, because of the recent sudden death of his wife. Motion was made and adopted to request the President to write such a letter in behalf of the Association.

On motion the Council adjourned.

THE PRESIDENT.—I understand that no action is necessary at this time on the names recommended by the Council. These names will come up for election on Wednesday morning.

A motion is in order regarding the recommendations of the Council in reference to the discontinuance of the Committee on Mental Hygiene and the recommendation in reference to the removal of delinquents from the subscription list of THE AMERICAN JOURNAL OF PSYCHIATRY.

Motion was made and adopted that the recommendations of the Council, mentioned by the President, be approved.

THE PRESIDENT.—The next in order is the Report of the Treasurer.

The Secretary, Dr. Haviland, will now read the report of the Secretary-Treasurer.

REPORT OF SECRETARY-TREASURER, 1924.

The following is a statement of membership of The American Psychiatric Association as of May 31, 1924:

HONORARY MEMBERS.

Former number	13	
Elected	1	
Total		14
Died		2
Present number		12

LIFE MEMBERS.

Former number	54	
Fellows to Life Members	7	
Total		61
Died		4
Present number		57

CORRESPONDING MEMBERS.

Former number	2	
Corresponding Member to Fellow	1	
Present number		1

FELLOWS.

Former number	740	
Members to Fellows	39	
Corresponding Member to Fellow	1	
Elected	36	
Reinstated	4	
Total		820
Fellows to Life Members	7	
Resigned	7	
Dropped	19	
Died	7	
Total		40
Present number		780

MEMBERS.

Former number	284	
Elected	47	
Total		331

Members to Fellows	39	
Resigned	3	
Dropped	7	
Died	2	
Total		51
Present number		280

TOTAL MEMBERSHIP.

Honorary members	12
Life members	57
Corresponding members	1
Fellows	780
Members	280
Grand Total Membership, May 31, 1924	1130

Total membership shows a net gain of 37 as compared with the year ended May 31, 1923.

There is a discrepancy of one in the number of Life Members, as compared with the 1924 printed list of Fellows and Members, the latter being as of April 30, 1924.

REPORT OF TREASURER—1923-1924.

June 1, 1923—Balance on deposit with Albany Trust Co. . . . . $ 610.83

RECEIPTS.

Dues:		
Fellows	$5,544.55	
Members	1,133.90	
Total from Dues	$6,678.45	
Miscellaneous:		
Sale of "The Institutional Care of the Insane"	$ 59.76	
Sale of gummed lists of members	18.75	
Total Miscellaneous Receipts	$ 78.51	
Total Receipts		$6,756.96
Total Funds, including Balance last year		$7,367.79

DISBURSEMENTS.

1923		
June 21	National Cut Rate Press, Detroit, printed lists of candidates for membership	$ 24.50
29	Stamps through Wm. A. Bryan	.75
	Stamps through C. M. Burdick	.75
	American Railway Express Co., express	.44

1923		
June 30	Eleanor Rausch, expenses to Detroit as stenographer....	$53.38
	Olive E. West, expenses to Detroit as stenographer.....	56.24
	C. Floyd Haviland, Secretary's expenses to Detroit and hotel bill for stenographers.....	139.28
July 1	Lord Baltimore Press, printing and distributing printed lists of members.....	509.08
	C. P. Brate, cards for Round Table Conferences.....	5.75
	C. P. Brate, letter heads.....	8.00
	Herman Ostrander, committee expenses connection with Detroit meeting	10.80
	Samuel Bass Warner, honorarium for annual address...	50.00
3	Postmaster of Albany, N. Y., stamps.....	13.00
11	Stamps through V. V. Anderson.....	.75
	C. P. Brate, stamped envelopes.....	26.00
	Samuel B. Warner, expenses for annual address.....	62.64
14	American Medical Association, 50 copies of "Principles of Medical Ethics".....	2.50
27	Stamps through National Committee for Mental Hygiene	.75
Aug. 1	Eleanor Rausch, stenographic services, June.....	13.87
20	Eleanor Rausch, stenographic and clerical services during July and August	60.00
Sept. 19	Rexford L. Holmes, Inc., proceedings National Anti-Narcotic Conference	10.25
	C. P. Brate, letterheads.....	14.70
	Jane McKeon, clerical services during August.....	3.75
	Rose L. Swartzman, clerical and stenographic services during July and August.....	20.25
	Lois E. Rudd, stenographic services June–Sept.....	29.05
	Florence Brooksby, clerical services, Aug., 1923.....	6.93
	Olive E. West, clerical services Aug. and Sept.....	10.50
	Leonore Evans, clerical services July and August.....	18.00
Oct. 11	Lewis M. Farrington, express on records to and from Detroit	10.48
	Johns Hopkins Press, balance due for Vol. 2 JOURNAL OF PSYCHIATRY	37.62
	Eleanor Rausch, clerical and stenographic services during September	30.00
23	Utica State Hospital, bill forms and envelopes.....	65.08
Nov. 7	Olive E. West, reporting Detroit meeting.....	100.00
	Eleanor Rausch, reporting Detroit meeting.....	100.00
	Eleanor Rausch, stenographic services during October..	30.00
Dec. 4	Geo. W. Harper Co., Journal for cash book.....	2.00
	Eleanor Rausch, stenographic services during November.	30.00
7	Postmaster of Albany, N. Y., stamps.....	20.06

1924			
Jan.	10	Eleanor Rausch, stenographic services, Dec.	$30.00
		Lois E. Rudd, clerical services from October to December	13.50
		Leonore Evans, clerical services, December and January.	14.63
		Olive E. West, clerical and stenographic services during December	7.87
		Stamps through Jas. K. Hall	.75
	30	Annesley & Co., new gavel handle	3.00
Feb.	4	Postmaster of Albany, N. Y., stamped envelopes	5.87
		Eleanor Rausch, stenographic services during January	30.00
	13	C. P. Brate, letterheads and envelopes	18.62
		Johns Hopkins Press, reprints of 1923 proceedings	17.09
	19	Johns Hopkins Press, subscriptions AMERICAN JOURNAL OF PSYCHIATRY	3,623.13
		Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	33.37
	25	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	5.25
Mar.	8	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	21.12
		Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	3.50
		Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	9.63
		National Committee for Mental Hygiene, subscription for work of Statistical Committee	250.00
		Eleanor Rausch, stenographic services during February	30.00
		Olive E. West, clerical services during February	4.12
		Lois E. Rudd, clerical services during January and February	6.75
		Leonore Evans, clerical services during January and February	14.06
	21	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	1.75
		Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	1.75
	24	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	4.37
Apr.	4	Postmaster of Albany, N. Y., stamps	30.15
	5	Johns Hopkins Press, additional subscriptions American Journal of Psychiatry	.88
		Johns Hopkins Press, additional subscriptions American Journal of Psychiatry	3.50
		C. P. Brate, printing 1200 "Preliminary Programs"	30.50
		C. P. Brate, envelopes for "Preliminary Programs"	16.00
	10	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	2.62

1924		
Apr. 23	Stamps through Nova Scotia Hospital	$.25
28	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	12.25
	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	9.13
	Leonore J. Evans, clerical services during March and April	19.69
	C. P. Brate, 500 letterheads	4.87
29	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	3.50
May 10	C. P. Brate, 500 applications for membership blanks	21.00
24	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	2.62
	C. P. Brate, programs annual meeting	269.00
	C. P. Brate, notices to accompany programs	2.90
	C. P. Brate, registration cards	5.80
26	Lois E. Rudd, stenographic and clerical services, March, April and May	21.37
	Olive E. West, stenographic and clerical services, March, April and May	22.50
	Leonore Evans, clerical services during May	2.63
	Eleanor Rausch, services as stenographer and clerk, March, April and May	90.00
27	C. P. Brate, reservation cards for Round Table Conferences	4.00
	Johns Hopkins Press, additional subscriptions AMERICAN JOURNAL OF PSYCHIATRY	6.12
	Total Disbursements	$6,308.56
	Debit—Two returned checks, $7 each	14.00
	Total Debits	$6,322.56

SUMMARY.

Total funds including balance last year	$7,367.79
Total debits	6,322.56
June 1, 1924—Balance on deposit with Albany Trust Co	$1,045.23

Respectfully submitted,

C. FLOYD HAVILAND, *Secretary-Treasurer.*

THE PRESIDENT.—According to the constitution, the Report of the Secretary-Treasurer will be referred to the Auditors for future report.

We will next have the report of the Editors of THE AMERICAN JOURNAL OF PSYCHIATRY which will be presented by Dr. Brush.

REPORT OF EDITORS OF AMERICAN JOURNAL OF PSYCHIATRY.

DR. BRUSH.—*Mr. President, Ladies and Gentlemen,* I have little new to report. I am not going to give a lecture as I have done heretofore year after year. I might intimate that of the forty-seven papers and two addresses that were given last year on the program, after a great effort on the part of the Secretary and the minor efforts on the part of the editors, we obtained but thirty-four. One gentleman after receiving, or at least having mailed to him in return envelopes, four requests, and being telegraphed to twice, sent in his paper sometime late in April, hoping that it could get in the April JOURNAL which was then on the press.

The JOURNAL, as Dr. Haviland has stated, has been successful in getting a reduction in the rates of printing of 10 per cent which will help us some in the next volume.

Dr. Solomon, the Chairman of the Program Committee, has intimated that the members do not come forward with papers. Now he does not know the whole story. They do, but they don't always get to the Program Committee. I have been at times very much distressed during the last three or four years by receiving papers from members of the Association which I should have been very glad to have printed, but for which there was no room in the JOURNAL unless we enlarged it beyond all reasonable bounds. Sometimes, I fear, the editors have been misjudged when manuscripts have been returned to authors for the sole reason of lack of room. Those who have looked over the April number will recall that it ends a volume of over 860 pages.

One of my former associates acknowledging receipt of the JOURNAL the other day, merely said he could not read it all; that he limited himself now to such papers as he could understand. Of course, that referred entirely to the editorial comments we printed. We do want the support of members of the Association in voluntary papers. The program this year is within more reasonable bounds than the program which offered forty-seven papers. We shall probably have more room for volunteer papers, and without any fear that the Chairman of the Program Committee will feel I am encroaching on his domain for next year, I wish to say we will welcome all volunteer papers with the understanding that it is sometimes impossible to publish papers because of lack of space.

I present herewith the financial report for the year.

A motion was made, seconded and adopted that the report of the Editors of THE AMERICAN JOURNAL OF PSYCHIATRY be accepted, and that the financial part be referred to the auditors.

The President announced the personnel of the Nominating Committee as follows: Dr. Herman Ostrander, Dr. Sanger Brown and Dr. Ross McC. Chapman.

THE PRESIDENT.—Since the Association met last year, 14 of our fellow members have laid down their work and have departed from this life. As the names are read by the Secretary, the members will please stand as a mark of respect to their memory.

The audience rose, and the following names were read by the Secretary:

Honorary Members.—Henry Hun, M. D., Albany, N. Y.; G. Stanley Hall, Ph. D., LL. D., Worcester, Mass.

Fellows.—Daniel D. Lustig, M. D., San Francisco, Cal.; Paul Waterman, M. D., Hartford, Conn.; Jos. F. Munnerlyn, M. D., Columbia, S. C.; Charles G. Wagner, M. D., Binghamton, N. Y.; Geo. F. Edenharter, M. D., Indianapolis, Ind.; Charles P. Bancroft, M. D., Concord, N. H.; Alfred P. Chronquest, M. D., New York, N. Y.; Charles K. Clarke, M. D., Toronto, Ont.; Wm. A. Stone, M. D., Kalamazoo, Mich.; Harold L. Palmer, M. D., Washington, D. C.

Members.—Alma E. Fowler, M. D., St. Petersburg, Fla.; Wallace J. C. Aubry, M. D., Binghamton, N. Y.

THE PRESIDENT.—In order that the next number on the program may proceed in due process of law, it is necessary for the Chair to ask for the services of a temporary chairman and after a brief recess, I would ask Dr. Owen Copp to kindly take the chair.

DR. COPP (presiding).—I would like to ask all the members to come up front. Please fill all the seats here. The meeting will please come to order. Dr. Salmon will address us.

The President then delivered his address which was received with prolonged applause.

DR. COPP (presiding).—It seems to me peculiarly appropriate that Dr. Salmon as President of this Association should deliver such an inspiring address. In the advances of psychiatry which he has outlined, no one man has contributed more than he has. In the field of mental hygiene, as Director of the National Committee for Mental Hygiene, he created clearer concepts of what psychiatry means to the community and marshalled more forces to promote their realization than any other man of my knowledge. I have heard it said that if we had not had Dr. Salmon or some one like him to conceive the idea of a neuropsychiatric service in the army and to formulate the plans on which it was conducted, we should not have had the splendid neuropsychiatric achievements of the late war. His own part in this country and abroad are well known to all as well as his very great interest and persistent energy in looking after the ex-service men who were mentally disabled and needed care and hospitalization after the war.

It has been a great personal pleasure to have Dr. Salmon President of this Association. The pleasure which I have felt in listening to his address, I am sure, is shared by all.

Will Dr. Mitchell express his appreciation?

DR. MITCHELL.—*Mr. Chairman and Members of the Association,* Dr. Salmon's opening remarks about prying into the dim and musty archives of forgotten years to secure inspiration for his address with which we have just been favored, might have pertinent reference to the dilemma of his immediate predecessor, who in a similar position, stirred up the dust of past years.

Fortunately for the Association, its President this year has had no occasion to recall ancient history. He has had no need to do more than epitomize his own work in relation to recent progress of psychiatry, in which he has been a productive worker and capable leader.

Dr. Salmon calls our attention to the fact that New York State, in addition to the money appropriated to meet its high maintenance charges for mental cases, has voted a fifty million dollar bond issue to be expended in the improvement of hospital facilities and conduct of its psychiatric service. I am confident that all present will agree that the action of New York is very largely due to efforts that have been led and directed by Dr. Salmon in a ten-year campaign to improve psychiatric service. Credit for this achievement should be given more generously to our President than to any other individual.

The Association is under a lasting obligation for the tact, skill and energy displayed by Dr. Salmon in establishing, for the first time in the history of wars, the psychiatric branch of medical service in a manner that won the respect and approval of the highest medical officers. In a letter received from Surgeon-General Ireland, concerning Dr. Salmon's relations with the department, he states: "It was always a pleasure to cooperate with him in putting into effect the sane, helpful and humane suggestions that he made for the benefit of mental cases."

Recognizing that the present status of neuro-psychiatry is very largely due to the untiring zeal of our President, I wish, in behalf of the Association, to thank him for what he has done in the past, what he is doing to-day and for what we may expect of him in the future, and to congratulate the members of The American Psychiatric Association that they have in the chair this year so worthy a representative, a man who has done more than most of us in interpreting to the public, the authorities and other interested persons the best expression of psychiatric effort.

DR. CAMPBELL.—Is it a great pleasure to second the remarks of Dr. Mitchell. Dr. Salmon's address has been distinguished by great felicity of phrase, broad scientific grasp, and true human feeling. I do not wish to blur the outline of the address by additional comments. It would be like painting the lily, or gilding refined gold. The former would argue a lack of æsthetic appreciation, the latter would show an absence of thrift.

I am glad, however, to have the opportunity of expressing in the name of the Association, deep appreciation of this notable address of Dr. Salmon.

The President then resumed the Chair.

THE PRESIDENT.—The Secretary has some matters of business to present after which the meeting will be adjourned.

The Secretary announced that there would be a brief meeting of the Council immediately after the close of the session, and also that the Committee on Statistics would have a meeting.

The Secretary called attention to the fact that this year one member had been designated to deal with matters of publicity,

Dr. George K. Pratt, Medical Director, Massachusetts Society for Mental Hygiene, who was appointed for the period of the annual meeting. The Secretary suggested that if any members were approached by newspaper men, the latter should be referred to Dr. Pratt.

The Secretary announced that a photograph of the members of the Association would be taken the following day immediately after the close of the morning session.

The meeting then adjourned.

Afternoon Session—Administration.

The meeting was called to order by the President at 2.00 p. m., in the West Solarium.

The Secretary announced that the Committee on Standards and Policies would have a meeting in the Council Room immediately after the close of the session.

At the request of Dr. Weeks, the Secretary extended an invitation on his behalf to all members of the Association and their guests to visit the New Jersey State Village for Epileptics at Skillman, N. J. At Dr. Weeks' request, the Secretary also announced that the members of the National Association for the Study of Epilepsy were requested to meet in the Council Room on Wednesday at 12.30 o'clock.

The Secretary also stated for the benefit of the members present that the session on Laboratory Subjects was being held simultaneously in the Banquet Room at the other end of the hall opposite the Dining Room.

The President announced as the first paper of the section that of Mr. Sullivan W. Jones and Mr. Howard Scott, of New York City, on "Functional Planning of Hospitals for Mental Disease." This paper was discussed by State Architect Mills and Commissioner Lewis of New Jersey, Drs. Harris and Hamilton, and by Mr. Scott in closing.

Dr. H. W. Mitchell, of Warren, Pa., then read his paper entitled, "Methods Employed in the Control of State Hospitals for Mental Patients: The Relation of Central Authority to the Local Management," which was discussed by Drs. Copp and Brush.

The following papers were then read: "The Administrative Problems of the Boston Psychopathic Hospital," by Dr. W.

Franklin Wood, of Boston, Mass.; and "How to Secure Public Support of a State Hospital," by Dr. Charles E. Thompson, of Gardner, Mass.

The section then adjourned until Wednesday morning.

Afternoon Session—Laboratory Subjects.

The meeting was called to order by Dr. C. W. Burr in the absence of the Vice-President at 2.30 p. m.

Dr. Burr announced as the first paper of the afternoon that of Dr. Theophile Raphael and Dr. George J. Smith, of Ann Arbor, Mich., on "The Kottmann Thyroid Reaction in Psychiatric Disorder," to be read by Dr. Raphael. This paper was discussed by Drs. Cheney, Barrett, Gibbs, Groeneveld, and by Dr. Raphael in closing.

The following papers were then read: "On the Significance of Certain Nerve Cell Changes in Relation to Clinical Diagnosis and Treatment," by Dr. Otis F. Kelly, of Hathorne, Mass., discussed by Dr. Raeder; "Pellagra—Report of a Case," by Dr. Lydia B. Pierce, of Westboro, Mass., discussed by Drs. Eyman, Hall, Meyer, Brown, Kelly, Farr, Gregory, and by Dr. Pierce in closing; "The Malarial Treatment of Paretic Neurosyphilis," by Dr. Nolan D. C. Lewis, of Washington, D. C., discussed by Drs. Solomon, Meyer, Kirby, Patten, Groeneveld, Raeder, and by Dr. Lewis in closing.

The following paper was read by title: "Plasma Phospholipoids in Psychoses," by Dr. John C. Whitehorn, of Waverley, Mass.

The section then adjourned.

The following Fellows and Members registered and were in attendance during the whole or a part of the meeting:

ARKANSAS.

Brown, L. R., M. D., Superintendent State Hospital for Nervous Diseases, Little Rock.

Kirk, C. C., M. D., Little Rock. 2

CALIFORNIA.

Dewey, Richard, M. D., Pasadena. 1

CONNECTICUT.

Bancroft, Harold A., M. D., Hartford.

Clark, George Edward, M. D., Stamford.

LaMoure, Chas. T., M. D., Superintendent Mansfield State Training School and Hospital, Mansfield Depot.

Leak, R. L., M. D., Superintendent Connecticut State Hospital, Middletown.

Robertson, Frank W., M. D., President and Medical Superintendent Stamford Hall Co., Inc., Stamford.

Shenk, Frederick P., M. D., Clinical Director Norwich State Hospital, Norwich.

Wilcox, F. S., M. D., Superintendent Norwich State Hospital, Norwich. 7

DELAWARE.

Hancker, W. H., M. D., Superintendent Delaware State Hospital, Farnhurst. 1

DISTRICT OF COLUMBIA.

Fisher, E. Moore, M. D., Medical Rating Section, U. S. Veterans Bureau, Washington.

Kolb, Lawrence, M. D., Surgeon U. S. P. H. S., Director Hygienic Laboratory, Washington.

O'Malley, Mary, M. D., Clinical Director St. Elizabeths Hospital, Washington.

White, William A., M. D., Superintendent St. Elizabeths Hospital, Washington.

Williams, Tom A., M. D., Attending Neuro-Psychiatrist Gallinger Municipal Hospital, Washington. 5

FLORIDA.

Benton, George H., M. D., Proprietor Sterling-Worth Sanitorium, Miami. 1

GEORGIA.

Allen, H. D., M. D., Superintendent Allen's Invalid Home, Milledgeville.

Baines, M. Carroll, M. D., Medical Officer in Charge, U. S. Veterans Hospital No. 62, Augusta.

Swint, Roger C., M. D., Superintendent Georgia State Sanitarium, Milledgeville.

Walker, N. P., M. D., Clinical Director Georgia State Sanitarium, Milledgeville. 4

ILLINOIS.

Adler, Herman M., M. D., Criminologist, Illinois Department of Public Welfare, Chicago.

Brown, Sanger, M. D., Medical Director Kenilworth Sanitarium, Kenilworth.

Favill, John, M. D., Attending Neurologist Cook County Hospital, Chicago.

Hulbert, Harold S., M. D., Chicago.

Levy, David M., M. D., Chicago. 5

INDIANA.

Shea, Richard L., M. D., First Assistant Physician Eastern Indiana Hospital for the Insane, Richmond. 1

IOWA.

Donohoe, George, M. D., Superintendent Cherokee State Hospital, Cherokee.

Orton, Samuel T., M. D., Director State Psychopathic Hospital, University of Iowa, Iowa City. 2

KANSAS.

Carmichael, F. A., M. D., Superintendent Osawatomie State Hospital, Osawatomie. 1

LOUISIANA.

Thomas, John N., M. D., Superintendent Louisiana Hospital for the Insane, Pineville. 1

MAINE.

Swift, Henry M., M. D., Portland.

Tyson, Forrest C., M. D., Superintendent Augusta State Hospital, Augusta. 2

MARYLAND.

Barlow, Charles A., M. D., Medical Officer in Charge, U. S. Veterans Hospital No. 42, Federal Park.

Boyd, William A., M. D., A. A. Surgeon, U. S. Veterans Hospital No. 42, Federal Park.

Brush, Edward N., M. D., Baltimore.

Chapman, Ross McC., M. D., Superintendent Sheppard & Enoch Pratt Hospital, Towson.

Clark, J. Clement, M. D., Superintendent Springfield State Hospital, Sykesville.

Coggins, Jesse C., M. D., Medical Director The Laurel Sanitarium, Laurel.

Dunton, William Rush, Jr., M. D., First Assistant Physician, Sheppard & Enoch Pratt Hospital, Towson.

Gillis, Andrew C., M. D., Baltimore.

Gundry, Alfred T., M. D., Medical Director Gundry Sanitarium, Catonsville.

Herring, Arthur P., M. D., State Commissioner of Mental Hygiene, Baltimore.

Hill, Charles G., M. D., Physician-in-Chief Mount Hope Retreat, Baltimore.

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Purdum, H. D., M. D., Clinical Director Springfield State Hospital, Sykesville.

Sargent, George F., M. D., Towson.

Wade, J. Percy, M. D., Medical Superintendent Spring Grove State Hospital, Catonsville. 15

MASSACHUSETTS.

Abbot, E. Stanley, M. D., Boston.

Bryan, Wm. A., M. D., Superintendent Worcester State Hospital, Worcester.

Campbell, Charles Macfie, M. D., Director Boston Psychopathic Hospital, Boston.

Canavan, Myrtelle M., M. D., Curator Warren Museum, Harvard Medical School, Boston.

Cohoon, E. H., M. D., Superintendent Medfield State Hospital, Harding.

Coriat, Isador H., M. D., Boston.

Edgerly, J. Frank, M. D., Superintendent Sherwood Hospital, Lincoln.

Evans, Albert, M. D., Secretary-Treasurer Hospital Trustees Association of Mass., Boston.

Fernald, Walter E., M. D., Superintendent Massachusetts School for Feeble-Minded, Waverley.

Greene, Ransom A., M. D., Superintendent Taunton State Hospital, Taunton.

Gregg, Donald, M. D., Superintendent Channing Sanitarium, Wellesley.

Healy, William, M. D., Director Judge Baker Foundation, Boston.

Hodskins, Morgan B., M. D., Superintendent Monson State Hospital, Palmer.

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Michael, Joseph C., M. D., Minneapolis.

Moersch, Fred P., M. D., Mayo Clinic, Rochester.

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MISSISSIPPI.

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MISSOURI.

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Wright, Wm. W., M. D., Clinical Director Utica State Hospital, Utica. 69

NORTH CAROLINA.

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McCampbell, John, M. D., Superintendent State Hospital, Morgantown.

McNairy, C. Banks, M. D., Superintendent Caswell Training School, for Mental Defectives, Kinston. 4

NORTH DAKOTA.

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OHIO.

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Reed, Ralph W., M. D., Cincinnati.

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OKLAHOMA.

Bagby, Ernest L., M. D., Superintendent Oklahoma State Hospital, Supply. 1

OREGON.

House, William, M. D., Portland. 1

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Leavitt, Frederic H., M. D., Philadelphia.

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Ostheimer, A. J., M. D., Medical Director Mental Hygiene Division Public Charities Association of Pennsylvania, Philadelphia.

Patten, Clarence A., M. D., Philadelphia.

Richardson, William W., M. D., Medical Director The Mercer Sanitarium, Mercer.

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Sandy, Wm. C., Director Bureau of Mental Hygiene, Pennsylvania Department of Welfare, Harrisburg.

Seiwell, H. S., M. D., Superintendent Retreat Mental Hospital, Retreat.

Sloan, George A., M. D., Narberth.

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Wholey, Cornelius C., M. D., Pittsburgh.

Wiseman, John I., M. D., Chief of Laboratories, Pittsburgh City Hospital, Pittsburgh.

Wiseman, Katherine T., M. D., Mayview. 39

RHODE ISLAND.

Blumer, G. Alder, M. D., Superintendent Emeritus Butler Hospital, Providence.

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Ruggles, Arthur H., M. D., Superintendent Butler Hospital, Providence. 3

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Williams, C. F., M. D., Superintendent South Carolina State Hospital, Columbia. 2

SOUTH DAKOTA.

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WEST VIRGINIA.

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CANADA.

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Forster, James M., M. D., Superintendent Ontario Hospital, Whitby.

McKay, Hugh A., M. D., Assistant Superintendent Ontario Hospital, Hamilton.

MacNaughton, Peter, M. D., Superintendent Ontario Hospital, Brockville.

Mitchell, Wm. T. B., M. D., Chief Psychiatrist Department of Soldiers Civil Re-establishment, Ottawa.

Wilson, William T., M. D., Superintendent Ontario Hospital, Cobourg. 7

Total 270

The following visitors and guests of the Association registered their names with the Secretary:

Adams, Mr., Trenton, N. J.

Adams, Rebecca A., Director of Ward Occupations, New Jersey State Hospital, Greystone Park, N. J.

Anderson, Mrs. V. V., "The Spruces," Shrewsbury, N. J.

Andrus, Ruth, Psychologist, Monmouth Co., Organization for Social Service, Red Bank, N. J.

Atkinson, Mary C., Assistant Psychologist, New Jersey Department Institutions and Agencies, Trenton, N. J.

Baber, Harriet, Matron Longview Hospital, Cincinnati, O.

Bachrach, Walter, Chicago, Ill.

Bagby, Mrs. E. L., Supply, Okla.

Bagby, Mary Lou, Supply, Okla.

Baines, Mrs. M. C., Augusta, Ga.

Baker, Mrs. Mary R., Williamsport, Penna.

Barlow, Mrs. Chas. A., Federal Park, Md.

Barr, E. S., M. D., Acting Medical Director, Highland Hospital, Asheville, N. C.

Beers, Clifford W., Secretary National Committee for Mental Hygiene, New York, N. Y.

Beling, Mrs. C. C., Newark, N. J.

Beutler, Mrs. W. F., Wauwatosa, Wis.

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Boardman, Rhea Kay, Red Bank, N. J.

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Brinker, Dorothy, Psychiatric Social Worker, Red Bank, N. J.

Brousseau, Albert, M. D., Professor de Psychiatric University Laval, Hospital St. Michel, Archange, Que.

Brown, Mrs. G. W., Williamsburg, Va.

Brown, Mrs. Sanger, Kenilworth, Ill.

Brown, Thelma J., Williamsburg, Va.

Brush, Mrs. Edward N., Baltimore, Md.

Bulkeley, F. Chauncey, Architect, Trenton, N. J.

Burdick, Mrs. C. M., Dannemora, N. Y.

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Donohoe, Louise, Cherokee, Iowa.

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Haskell, Mrs. Robert H., Ionia, Mich.

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Mills, Harriet May, New York State Hospital Commissioner, Syracuse, N. Y.

Mitchell, Mrs. H. W., Warren, Penna.

Moersch, Mrs. F. P., Rochester, Minn.

Moosbrugger, Herman F., President, New Jersey State Village, Skillman, N. J.

Moylan, Mary B., Superintendent of Nurses, New Jersey State Hospital, Morris Plains, N. J.

Mühl, Anita M., M. D., Psychiatrist, Providence Hospital, Washington, D. C.

Mulder, J. D., M. D., Superintendent, Christian Psychopathic Hospital, Grand Rapids, Mich.

Mulrey, Agnes L., Secretary, New Jersey State Board of Control of Institutions and Agencies, Trenton, N. J.

Musa, A. B., M. D., New Jersey State Hospital, Trenton, N. J.

Newbold, W. A., M. D., Medical Director, Caswell Training School, Kinston, N. C.

Niles, Helen R., Pyychologist, Highland Park Public Schools, Highland Park, Mich.

North, Mrs. Emerson A., Cincinnati, Ohio.

Ostrander, Mrs. Herman, Kalamazoo, Mich.

Packard, Mrs. F. H. Waverley, Mass.

Page, Mrs. W. S., Columbus, Ohio.

Page, Walter S., Attorney, Columbus, Ohio.

Parker, J. H., M. D., Superintendent State Hospital No. 4, Farmington, Mo.

Patterson, Mrs. W. L., Fergus Falls, Minn.

Patterson, William L., M. D., Assistant Superintendent, Fergus Falls State Hospital, Fergus Falls, Minn.

Paulsen, Mr., Trenton, N. J.

Payne, Mrs. Guy, Cedar Grove, N. J.

Peters, Marie W., Psychologist and Social Worker, Philadelphia General Hospital, Philadelphia, Penna.

Pollock, Horatio M., Ph. D., Statistician and Editor, New York State Hospital Commission, Albany, N. Y.

Pollock, Mrs. Horatio M., Albany, N. Y.

Priddy, Mrs. A. S., Colony P. O., near Lynchburg, Va.

Putman, Mary L., Field Representative for Occupational Therapy, Department of Public Welfare, Harrisburg, Penna.

Ragsdale, L. E., M. D., Donelson, Tenn.

Ramsay, David, Yonkers, N. Y.

Raphael, Mrs. Theophile, Ann Arbor, Mich.

Rapp, Walter, Chairman Board of Trustees, Medfield State Hospital, Medfield, Mass.

Remy, Chas. E., M. D., Assistant Superintendent and Clinical Director, Yankton, State Hospital, Yankton, S. D.

Riley, Wm. H., M. D., Chief Neurology and Psychiatry, Battle Creek Sanitarium, Battle Creek, Mich.

Robertson, Edith, New York, N. Y.

Robertson, Mrs. F. W., New York, N. Y.

Robinson, Margaret, M. D., Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore, Md.

Rowley, Mrs. Chas. C., West Roxbury, Mass.

Rutherford, Mrs. T. A., Clark's Summit, Penna.

Schultz, Mildred, Psychologist, Caswell Training School, Kinston, N. C.

Schwatt, Louis D., M. D., Assistant Physician, Philadelphia Hospital for Mental Diseases, Philadelphia, Penna.

Seiwell, Mrs. Harry S., Retreat, Penna.

Selzer, Miss J. B., Cleveland, Ohio.

Shea, Mrs. Richard L., Easthaven, Richmond, Ind.

Shields, Eloise A., Bloomingdale Hospital, White Plains, N. Y.

Shuffleton, Mrs. Joseph H., Kings Park, N. Y.

Sitterson, Mrs. S. C., Director, Caswell Training School, Kinston, N. C.

Slagle, Mrs. Eleanor C., Director, Occupational Therapy, New York State Hospital Commission, New York, N. Y.

Smith, Catherine L., Secretary to Superintendent, New Jersey State Village for Epileptics, Skillman, N. J.

Smith, Mrs. George A., Central Islip, N. Y.

Smith, Mrs. Henry G., Cedar Grove, N. J.

Smith, Philip, M. D., Deputy Medical Inspector, New York State Hospital Commission, New York, N. Y.

Snavely, Betty, Newark, N. J.

Snavely, Mrs. Earl H., Newark, N. J.

Solomon, Mrs. H. C., Social Worker, Boston Psychopathic Hospital, Boston, Mass.

Stamp, J. H., M. D., Assistant Physician, New Jersey State Hospital, Greystone Park, N. J.

Stanley, Mrs. E. A., Waterbury, Vt.

Stevens, Elmer A., Massachusetts Commission on Mental Diseases, Boston, Mass.

Stevens, Mrs. Elmer A., Boston, Mass.

Stone, Mrs. Charles W., Cleveland, Ohio.

Sullivan, H. S., M. D., Assistant Physician and Psychotherapist, Sheppard and Enoch Pratt Hospital, Towson, Md.

Sutton, Mildred J., Senior Clerk, State Department of Institutions and Agencies, Trenton, N. J.

Swint, Mrs. Roger, Milledgeville, Ga.

Taber, Mrs. Katherine H., Psychiatric Social Worker, Philadelphia General Hospital, Philadelphia, Penna.

Taneyhill, G. Lane, M. D., Associate in Neurology, Johns Hopkins University, Baltimore, Md.

Taylor, Helen B., Chief Occupational Therapist, Norristown State Hospital, Norristown, Penna.

Terhune, Mrs. Wm. B., Stockbridge, Mass.

Thomas, Mrs. John N., Pineville, Ia.

Tiffany, Mrs. Wm. J., Kings Park, N. Y.

Tinsley, J. A., M. D., Superintendent, Colony for Feeble-Minded Males, Woodbine, N. J.

Todd, Mrs. M. E., Pawhuska, Okla.

Tuttle, Mrs. George T., Milton, Mass.

Vaughn, T. E., Colony for Feeble-Minded Males, Woodbine, N. J.

Waygood, James J., M. D., Assistant Physician, Pennsylvania Hospital, Philadelphia, Penna.

Weber, Chas., Newark, N. J.

Weeks, Mrs. David F., Skillman, N. J.

White, Mrs. William A., Washington, D. C.

Wilcox, Mrs. F. S., Norwich, Conn.
Wilson, D. C., Clifton Springs, N. Y.
Wilson, Mrs. Wm. T., Cobourg, Ont.
Wood, W. Franklin, M. D., Chief Executive Officer, Boston Psychopathic Hospital, Boston, Mass.
Woodman, Ethel D., Middletown, N. Y.
Wright, Mrs. W. W., Utica, N. Y.

Total visitors and guests, 210. Total attendance, 480.

Wednesday, June 4, 1924.

Morning Session.

The Association was called to order by the President at 10.00 a. m.

The President announced a report of the Council, which was presented by the Secretary.

Report of the Council.

A meeting of the Council was held Tuesday noon, June 3, 1924.

An informal discussion was had as to whether or not applications coming in after the regular Council meeting Monday evening should be considered. It was the opinion of the Council that the provisions of the constitution in regard to the matter should be enforced, and the Secretary was directed to file all applications received subsequent to the regular Monday evening Council meeting, for presentation next year.

The report of the Council was, on motion duly seconded, adopted.

The President.—The next order of business is the election of members. The three gentlemen proposed this year for election to Honorary Membership were unanimously approved by the Council at its meeting Monday evening, June 2, for election at the meeting this year, together with the name of Dr. Horatio M. Pollock, proposed last year.

It was moved that the nominations for Fellowship made this year be laid over until next year under the rule, and that those recommended by the Council for election to Fellowship, Membership, and Honorary Membership respectively be duly elected by authorizing the Secretary to cast one ballot electing to the Association those proposed for election to Fellowship, Membership, and Honorary Membership, and those to be transferred from Membership to Fellowship.

The motion was seconded and carried, and the Secretary cast one ballot.

The President announced as the next order of business the report of the Nominating Committee.

DR. CHAPMAN.—The Nominating Committee desires to present for your consideration the following names:

For President, William A. White.

For Vice-President, C. Floyd Haviland.

For Secretary-Treasurer, Earl D. Bond.

Councilors for three years: W. M. English, C. C. Kirk, W. G. Ryon and Sidney D. Wilgus.

Auditor for three years: L. V. Guthrie.

THE PRESIDENT.—You have heard the report of the Nominating Committee. It is in order to move its acceptance and the election of officers recommended, and also in order, if the Association desires, to place any other nominations in the field.

DR. HARRIS.—I move that the report of the Nominating Committee be accepted as read. Inasmuch as it would be embarrassing for Dr. Haviland to cast a vote for himself, I move that the President designate Dr. Tuttle to cast a ballot for the officers nominated in behalf of the Association.

Dr. Harris' motion was seconded and carried. Dr. Tuttle cast one ballot electing the officers.

The President announced that the report of the Auditors would be deferred until Thursday.

Then followed the report of the Committee on Occupational Therapy which, in the absence of the chairman, Dr. Dunton, was read by the Secretary:

REPORT OF COMMITTEE ON OCCUPATIONAL THERAPY.

To the Members of The American Psychiatric Association:

Your Committee on Occupational Therapy submits the following: Its first activity was to arrange the subjects to be discussed and the speakers to introduce them at the round table to be held on Thursday evening. The committee also sent notices to all of the hospitals listed in the directory supplied by the secretary announcing the program for the round table and requesting that they submit charts, graphs, figures and other compact material for the exhibit. The Marlborough-Blenheim Hotel very courteously assigned space for this exhibit without charge.

It was deemed unwise to send out a questionnaire this year as one had been sent last year. Previous experience also indicates that the percentage of those replying to this questionnaire is too small to permit accurate conclusions being drawn. The last questionnaire elicited only 78 replies.

There is undoubtedly some confusion in the minds of individuals as to the meaning of occupational therapy, and many hospital physicians and

superintendents include under this term what others would call hospital industries, meaning the various necessary occupations for the administration of the hospital, in which the patient may take a valuable part as a member of the hospital community. While there are frequent occasions when such occupation may have a therapeutic benefit, there are undoubtedly others where the patient is not improved and has opportunity to form stereotyped habits and get into a rut, in which, were those in charge more thoughtful, he would not be allowed to continue. Undoubtedly the work in state hospitals is very much hampered by the fact that physicians have such onerous duties that they cannot give the individual care to the patients which is desirable. A number of state systems have organized departments of occupational therapy so that the physician may be materially assisted in his care of the patient, with much benefit.

In a number of instances there has been some discussion as to the status of workers in occupational therapy. This is a question upon which it is difficult to lay down arbitrary rules. In some hospitals the group of occupational therapists should probably be classed with the nursing organization, while the head occupational therapist or aide should occupy a staff position in order that the connection between the medical department and her own may be closer.

Notable examples of state hospital systems are those of Illinois, Pennsylvania, and New York where Mrs. Eleanor Clarke Slagle, who will speak at the round table, has planned and is carrying out a most efficient course in occupational therapy. Notable work has been done at the Chicago State Hospital under the direction of Dr. Edward A. Foley, who has organized a special department called the pre-industrial, in which patients who have passed through the occupational therapy department—have graduated, so to speak—but who are not sufficiently well to participate in hospital industries, are occupied with specialized occupations such as rug working, basketry, and so on, and form a useful and happy part of the hospital community.

The literature of occupational therapy has already become quite extensive and it is pleasing to see that many of the papers recently presented partake of the nature of careful research and that efforts are being made to establish a more scientific basis for this form of treatment. The majority of these papers in America have been read before the American Occupational Therapy Association and are published in the *Archives of Occupational Therapy*. Probably occupational therapy among the insane presents more difficulties for the research worker than with the tuberculous, cardiacs, or crippled because of the lack of coöperation due to the patient's infirmity. At the same time valuable information has been achieved and much more will follow, and it is hoped that all hospital superintendents will encourage this type of research among their associates.

Respectfully submitted,

W. R. Dunton, *Chairman.*

On motion duly seconded the report of the Committee on Occupational Therapy was accepted.

Dr. May, chairman, then read the following report of the Committee on Statistics:

REPORT OF COMMITTEE ON STATISTICS.

During the past year the committee has continued to have the coöperation of the Department of Information and Statistics of the National Committee for Mental Hygiene, which has distributed manuals, tabular forms, and record cards to coöperating hospitals, answered inquiries relative to the tables and methods of record keeping, checked up annual reports, and prepared statistical studies therefrom.

The most important activity has been its coöperation with the Federal Census Bureau in the country-wide census of hospitals for mental diseases. Preliminary data announced by the Census Bureau show that there were 290,457 patients on the books of these hospitals in this country, on December 31, 1922. The complete report of this census study will contain data for the country as a whole that have heretofore been impossible to assemble. This census differs from previous ones in that first admissions will be separated from readmissions and transfers, and that psychoses will be correlated with other factors in the tables. More data concerning administration and financial operations will be included than in any previous study. The Association's classification of mental diseases and other features of its uniform statistical system have been used in taking this census.

This recognition of the Association's statistical system on the part of the Census Bureau should serve as an impetus to non-coöperating hospitals to join in the movement.

Two studies have been published during the year, in which the uniform statistical tables sent to the National Committee for Mental Hygiene have been used—one entitled *General Paralysis in State Hospitals for Mental Disease,* published in the July, 1923, issue of *Mental Hygiene,* and the other, *Prohibition and Alcoholic Mental Disease,* which appeared in the March-April number of the *American Review,* and in the April, 1924, number of *Mental Hygiene.* The first presented social facts concerning 3000 persons with general paralysis admitted to 88 state hospitals during 1921. The latter one, which aimed to correct current fallacies concerning the effects of prohibition on mental disease, included 1252 first admissions with alcoholic psychoses during 1922 to 98 state hospitals for mental diseases, and compared data before prohibition with 1922 data.

Similar studies for other groups of mental diseases are contemplated, and will be begun as soon as a sufficient number of tables for the year 1923 is received to warrant tabulation.

Although practically all of the state hospitals, and many of the large county and private institutions have signified their intention to follow the system, there are still a number that have failed to send in tabular forms,

or to follow the Association's system in making out their annual reports. The committee would urge these hospitals and those few others who have not expressed an interest, to join in the movement as soon as they find it possible to do so.

Interest in the Association's system has been shown by hospital superintendents in other countries. The Ontario hospitals are considering the system. A number of delegates from European countries and South America have taken home with them the manual, sample record cards, and tabular forms, and have expressed the hope that a similar system might be adopted in their countries.

The committee would again urge the establishment of central statistical bureaus by state departments or boards having supervision of hospitals for mental diseases. These bureaus would receive card reports from the hospitals in their respective states and attend to the compilation of annual statistics of each hospital. This procedure would result in many advantages that are apparent to persons engaged in hospital work.

In recognition of the efforts of the National Committee for Mental Hygiene in forwarding the statistical system, the Association voted last year to make an appropriation to the National Committee to aid in carrying on this work. Your Committee would recommend that the Association take similar action this year, so that the National Committee may continue to coöperate with the Association and the institutions in the collection of these valuable social and scientific data.

Respectfully submitted,

JAMES V. MAY, *Chairman.*
ALBERT M. BARRETT,
E. STANLEY ABBOT,
C. MACFIE CAMPBELL,
OWEN COPP,
GEORGE H. KIRBY,
SAMUEL T. ORTON,
THOMAS W. SALMON,
FRANKWOOD E. WILLIAMS,
Committee on Statistics.

Motion was made by Dr. Brush that the report be accepted and the recommendations adopted. The motion was seconded and carried.

THE PRESIDENT.—We name the following as a Committee on Resolutions:

Richard Dewey, Chairman; E. Armitage Baber; and Frankwood E. Williams.

Under the head of new business, Dr. Brush read a resolution relating to rules which shall hereafter govern readers of papers in regard to the presentation of completed papers for printing, and this resolution was referred to the Committee on Resolutions.

THE PRESIDENT.—With the consent of the gentlemen who are to read the first three papers on the program, the paper of Dr. Spencer L. Dawes of New York City, entitled "Immigration and the Problem of the Alien Insane," will come first.

The President called Dr. Brush to the Chair.

DR. BRUSH (presiding).—We will now hear Dr. Dawes paper.

The paper was then read. Dr. Brush asked Hon. Frank B. Hall, Chairman of the Board of Trustees of the Grafton, Mass., State Hospital to open the discussion. Dr. Salmon resumed the Chair.

Dr. Dawes' paper was discussed by Mr. Hall, Drs. Pollock, Salmon, Groeneveld, Blumer, Devlin, Williams and Brush, and by Dr. Dawes in closing.

The paper by Dr. Austen F. Riggs and Dr. William B. Terhune, of Stockbridge, Mass., on "The Psychoneuroses—A Problem in Re-Education," was read by Dr. Terhune.

The discussion of this paper was deferred until the other two papers on the psychoneuroses had been read, and Dr. Edward Mayer, of Pittsburgh, Pa., then read his paper on "The Problem of the Psychoneuroses."

Owing to the lateness of the hour, the remaining papers on the program were postponed until the afternoon session.

The Secretary announced for the Chairman of the Committee on Nursing a meeting of such committee to be held in the Council Room immediately after the session, upon which the Association adjourned.

AFTERNOON SESSION.

The meeting was called to order at 2.00 p. m. by the President.

THE PRESIDENT.—There is this year an unfortunate conflict bewteen the days of meeting of this Association and the American Neurological Association. Dr. Walter Timme of New York, who has a paper tomorrow, has found it necessary to be in Philadelphia then and possible to come this afternoon, and his paper therefore will be given now instead of the one which follows the ordinary program. Dr. Timme's paper is entitled, "Childhood Inadequacies in Relation to the Internal Glandular System."

At this point Dr. A. Groeneveld, Assistant in Neurology, University of Amsterdam, Amsterdam, Holland, was welcomed by the President, introduced to the Association, and made a fitting response.

Dr. Timme then read his paper, which was discussed by Dr. Terhune.

The problem of the psychoneuroses, which had been interrupted by the close of the morning session, was resumed, Dr. Tom A. Williams, of Washington, D. C., reading his paper entitled, "The Mechanism of the Psychoneuroses with Special Relation to the Recoveries of Patients." The three papers on the psychoneuroses were discussed by Drs. Hutchings, Oberndorf and Brill, and by Drs. Terhune, Mayer, and Williams in closing.

Dr. G. Alder Blumer was then called to the Chair for the remainder of the session.

DR. BLUMER (presiding).—*Ladies and Gentlemen:* I am very much obliged to the President of the Association for his kindness and courtesy in allowing me, after 21 years, to wear his mantle, even for a short space of time. I remember coming across the definition of the word "siren" in a modern lexicon not long ago and being greatly impressed by its applicability to the chairmanship of meetings of this kind. The lexicographer defined it thus: "Siren, an instrument which produces musical sounds by introducing a regularly recurring discontinuity into an otherwise steady blast of air." I hope I may be able to live up to that definition to some extent during my brief exercise of authority.

My first duty, the Secretary tells me, is to introduce a gentleman from Quebec, and he has put in my hands a letter which I will not presume to translate, preferring to assume that you know French just as well as you do English, and certainly I am not going to assume that you know the language any less than I do myself. The letter reads:

(Letter in French, the translation of which follows):

QUEBEC, May 2, 1924.

To the President and Members of The American Psychiatric Association, Atlantic City:

GENTLEMEN.—We have the honor to introduce to you Doctor Albert Brosseau, formerly Clinical Director of Psychiatry of the faculty of Paris, likewise of the French Hospital for the Insane, at present Chief Clinical Medical Director of the Saint Michel Archange Hospital for the Insane of Quebec, and Professor of Psychiatry at our University. These titles speak for his competency and will, we have the hope, incline you to accord to him a cordial reception in his capacity as a delegate of our medical faculty.

Kindly accept, gentlemen, from me the sentiments of our highest consideration with which I have the honor to be,

Your humble servant,

C. N. GARIEPY,

Priest, P. A.,

Rector Laval University.

Dr. Blumer then introduced to the Association Dr. Albert Brousseau, who addressed the members in French, as follows:

I beg to thank you most heartily for your kind greetings, and in doing so I assure you that at your next meeting I have every hope that I will be able to address you in your mother tongue.

Dr. Blumer announced as the next paper, "The Place of Psychiatry in the Medical School Curriculum," by Everett S. Elwood, of Philadelphia, Pa., by invitation.

The Secretary announced a meeting of the Council with the Committee on Standards and Policies for Thursday morning at 9 a. m.; he also urged the members of the Association who planned to attend the Round Table Conferences to make their reservations by 6 o'clock and further stated that the reports of committees scheduled for that afternoon would be called for Thursday morning.

The next paper read was that on "The Re-Education of a Psychoneurotic Girl," by Dr. Jessie Taft, of Philadelphia, Pa., by invitation.

DR. BLUMER (presiding).—A distinguished educator in the State from which Dr. Taft comes has said recently in a paper called "The Quaker" that too much of our instruction nowadays is directed toward saving those who are drowning and those who will never learn to swim with much grace or strength.

I think we who have listened to Dr. Taft's paper will all agree that it was worth while to throw out a life-line to Rebecca, and will hope that she will make herself useful about the well and keep on carrying her pitcher to and fro without great risk of fracture.

Dr. Blumer announced that Dr. Taft's paper would be discussed with the next two, entitled "Some Emotional Problems Seen in the Superior Child," by Dr. Marion E. Kenworthy, of New York, and "Problems of the Personality of School Children and the Responsibility of the Community for Dealing with the Problem," by Dr. C. Macfie Campbell, of Boston, Mass., which were then read.

DR. BLUMER (presiding).—These three very interesting and valuable papers are open to the meeting for discussion.

Before calling on the members, I should like to say a word myself about Dr. Kenworthy's paper, even at the risk of seeming to confuse my temporary functions with those of a toastmaster. When Dr. Kenworthy spoke about the lady who supplied food at regular intervals to the child while the child went on with his reading, there was a suggestion of Plato, who assures us, I believe, that the human intestines are long in order that we may have leisure between meals to study philosophy. It occurred to me as Dr. Kenworthy talked, how delighted Plato would have been to meet Harold and his fond mama.

These three papers were discussed by Drs. Thom and Levy.

DR. BLUMER (presiding).—If there is no further discussion, I will announce that Dr. David M. Levy's paper on "Resistant Behavior of Children," will be given as the first paper tomorrow morning, as it calls for lantern slides. It will be followed by that of Dr. Goodhard, which also calls for lantern slides.

The annual address of Professor Lewellys Franklin Barker will be delivered in this hall at half past eight this evening.

Meeting adjourned.

WEDNESDAY EVENING SESSION.

The meeting was called to order at 8.20 p. m., by the President.

THE PRESIDENT.—This Association has been extremely fortunate in the past in the fact that great leaders in medicine, surgery, law and social work have consented to give the annual address. Never, however, have we been more fortunate than tonight.

Dr. Barker needs no introduction. He is known to every physician as a great teacher of medicine, an indefatigable searcher for new truth in almost every department of medicine, but he has a special bond of sympathy with us, for not only in his researches and in his writing and in his teaching and in his clinical work, but also in his broad grasp of medicine as a whole, he has dwelt upon many things which we as psychiatrists have found in the lives of our patients. We are especially fortunate in having the gentleman who was the President of the National Committee for Mental Hygiene during the first ten years of its existence address the Association on the subject of "Psychiatry and Public Health."

The annual address, "Psychiatry and Public Health," was delivered by Dr. Lewellys Franklin Barker, Professor of Clinical Medicine, John Hopkins University, Baltimore, Md., and was received with prolonged applause.

THE PRESIDENT.—It is a tradition in this Society that the annual address is not subject to discussion, but it is also a happy custom to bestow upon one of our members the honor of moving the vote of the appreciation of the Association. The Chair would recognize for that purpose our President-Elect, Dr. William A. White.

DR. WHITE.—*Mr. President, Dr. Barker, Ladies and Gentlemen:* When a gentleman of Dr. Barker's position in the medical world and his multitudinous activities comes to one of our annual meetings to deliver the address, most of us realize the many sacrifices that he has made to accommodate us in this particular, and we must all of us be deeply grateful to him for the effort that he has been put to.

In addition to that, when we hear from an avowed internist a survey of the present status of psychiatry, which would do honor to any member of our own society, could he present it, we ought to feel very happy that our work has made such an impression upon the medical world outside of us. If we could feel that this reaction of Dr. Barker was a fair expression of the effect that psychiatry has had upon general medicine, we could lay down our task in the full conviction that it would be carried on to its completion without any further effort on our part.

In a large organization of this sort with so many present upon an occasion like this, there is but one conventional way of expressing our appreciation to the guest of the evening. I shall invoke that conventional method in a moment, but I want Dr. Barker to know that back of this conventional gesture when it is made, there is a feeling of deep personal gratitude for the message that he has brought and a deep personal appreciation of him.

And so with this qualification, I will move you, Mr. President, that the Association extend to Dr. Barker a rising vote of thanks for his interesting, his instructive, his stimulating and his masterly address.

A rising vote of thanks was unanimously offered.

The Association then adjourned to attend the President's reception.

THURSDAY, JUNE 5, 1924.

MORNING SESSION.

The meeting was called to order by the President at 10.00 a. m.

The President announced as the first order of business, a report of the Council. The Secretary presented the following:

Report of Council Meeting held Thursday morning, June 5, 1924.

Dr. Salmon in the Chair.

Present: Dr. Haviland, Secretary-Treasurer; Dr. White; Dr. Brown; Dr. Clark; Dr. Russell; Dr. Mitchell; Dr. Chapman; Dr. Swint; Dr. Copp; Dr. Abbot; Dr. Harris.

Committee on Standards and Policies present on invitation of the Council.

The Secretary read invitations from various cities seeking the 1925 meeting. Especially cordial invitations were received from Los Angeles, California; Richmond, Virginia; Cincinnati, Ohio; and St. Louis, Missouri. After some dicussion the Council decided to defer the selection of a place of meeting for 1925 until a subsequent meeting of the Council, it being understood that meanwhile the various members of the Council would seek to learn the preference of the various members of the Association regarding the matter.

The President read the following statement presented by Dr. Edward N. Brush, Editorial Member of THE AMERICAN JOURNAL OF PSYCHIATRY:

"At a meeting of the members of the Editorial Board of THE AMERICAN JOURNAL OF PSYCHIATRY it was unanimously agreed to recommend to the

Council of The American Psychiatric Association, Dr. H. Douglas Singer to take the place on the Editorial Board made vacant by the death of Dr. Charles K. Clarke."

The Council voted to recommend to the Association the adoption of the recommendation of the Editorial Board of THE AMERICAN JOURNAL OF PSYCHIATRY.

The Secretary presented to the Council a request from the New York City Public Library for three bound volumes of transactions of previous years. In view of the fact that the New York City Public Library is in large part supported by charitable funds, it was

Voted, That the three volumes requested be furnished without cost.

Dr. Russell, Chairman of the Committee on Standards and Policies, read to the Council the report formulated by the committee, stating that the committee would appreciate the opinion of the Council in regard to a program of standardization providing minimum requirements for approved hospitals for mental disease. The Council unanimously expressed its approval of the suggestion of the committee to formulate minimum standards to be adopted by hospitals for mental disease before the latter could be regarded as approved hospitals by the Association. A motion was adopted to present the Council's approval of the recommendation to the Association.

No change was made in the dues for the ensuing year.

On motion the Council adjourned.

It was regularly moved, seconded and carried that the report be received and its recommendations adopted.

The President announced that the Committee on Ethics had no report to make and that as the Committee on Mental Hygiene had been discontinued, there would be no report from that committee.

The Secretary announced that Dr. Cotton, Superintendent of the New Jersey Hospital, had extended an invitation to the members of the Association to visit his hospital.

The President next called for the report of the Committee on Pathological Investigation.

Dr. Tiffany submitted the following report:

REPORT OF COMMITTEE ON PATHOLOGICAL INVESTIGATION.

Last year at the Detroit Meeting this committee presented a report to the Association in which certain minimum requirements for pathological laboratories in state hospitals were recommended. That report was made after a survey of laboratory conditions in federal, state and larger private hospitals for the insane in the United States and Canada had revealed the fact that pathology in such institutions in general had regressed since a similar survey was made five years before. Certain recommendations were made for remedying such conditions.

This year the committee felt that a demonstration of laboratory equipment needed in a state hospital laboratory to meet the suggested standards of work would be instructive and would perhaps further stimulate interest in laboratory work.

Such a demonstration has been set up in the Ohio Avenue Hall in the basement of this portion of this hotel near the registration desk and a demonstrator is present who will give information regarding the apparatus—its installation in laboratories, its use, cost, etc.

It was originally planned to have a completely equipped laboratory set up and working, but this ambitious program was impossible this year because of space limitations in the exhibit room, lack of water supply, electric outlets and other restrictions imposed by the hotel management.

This laboratory exhibit has been arranged roughly into three sections approximating as nearly as possible the three rooms recommended as the minimum number of rooms for a state hospital laboratory. One section contains equipment for autopsy work; one is equipped for clinical pathology; and one contains apparatus for histopathology.

Unfortunately some of the firms who coöperated in furnishing the equipment have large demonstrations at the American Medical Association meeting in Chicago and at other meetings and were therefore unable to furnish as complete equipment as was desired by the committee, but most of the necessary apparatus is present.

All of the larger manufacturers of laboratory equipment in greater New York and some outside of New York were personally interviewed by members of the committee and practically all expressed a willingness to coöperate in the demonstration. The apparatus on exhibit has been furnished, transported to this city, set up and will be recrated and returned—all without expense to the Association and the committee wishes to here express its appreciation of the coöperation of exhibiting firms.

Any Fellow or Member of the Association wishing to have a list of equipment for a laboratory to meet the minimum requirements recommended by the committee last year can have the same forwarded to his address upon registration at the exhibition room.

Wm. J. Tiffany, M. D., *Chairman.*
Samuel T. Orton, M. D., *Vice-Chairman.*
Albert M. Barrett, M. D.,
Myrtelle M. Canavan, M. D.,
Clarence O. Cheney, M. D.,
George H. Kirby, M. D.,
Adolf Meyer, M. D.
H. Douglas Singer, M. D.

The report of the Committee on Pathological Investigation was on motion adopted.

The President.—The first paper this morning will be that of Dr. David M. Levy, of Chicago, Ill., who will read a paper on "Resistant Behavior of Children." This paper was put over from yesterday afternoon.

Dr. Levy then read his paper, after which Dr. S. P. Goodhard of New York City, read his paper on "Demonstration by Means of Moving Pictures of Patients Showing Interesting Forms of Nervous Disease." Both of these papers were illustrated by moving pictures.

THE PRESIDENT.—I will now call for the paper of Dr. A. A. Brill, of New York City, entitled: "Psychoses and Neuroses, in Relation to Schizoid and Syntonic Tendencies."

Dr. Brill then read his paper.

THE PRESIDENT.—We will pass to the next paper by Dr. William A. White, of Washington, D. C., on "Primitive Mentality and the Racial Unconscious."

This paper was discussed by Drs. Brill and Sullivan, and by Dr. White in closing.

The Secretary called attention to the Council meeting directly after the morning session and stated that he had some programs of the Neurological Association meeting in case any of the members were going to Philadelphia, whereupon the Association, on motion, adjourned.

AFTERNOON SESSION.

The meeting was called to order at 2.00 p. m.

The President announced that a short business session was necessary before proceeding with the scientific session.

The Secretary read the following report of the Council.

A meeting of the Council was held Thursday, June 5, 1924, at 12:30 p. m.

The Council considered the time and place for the 1925 meeting. After considerable discussion the Council finally voted to hold the 1925 meeting of the Association in Richmond, Va., the time of the meeting to be preferably the latter part of May or the early part of June, but the exact dates to be later fixed by the President and the Secretary-Treasurer.

The report of the Council was accepted as read.

The President stated that the report of the Auditors was next in order but as Dr. Harris was not in the room, the report of the Committee on Nursing would be received.

Dr. Ruggles read the report of the Committee on Nursing.

REPORT OF THE COMMITTEE ON NURSING.

The Committee on Nursing has devoted the past year to submitting the Minimum Standard Curriculum adopted at the meeting in Detroit last

June to the mental hospitals of the United States and Canada. This has been a difficult undertaking as the committee had no funds whatever to work with and it was only through the coöperation of one of the members of the committee, Dr. Ross McC. Chapman, that these forms were printed at the Sheppard and Enoch Pratt Hospital.

The response from the hospitals was in general most gratifying. Many of them sent in their training school schedules very promptly and many who could not comply expressed the hope that they might soon be able to raise their requirements in accordance with our recommendations. Forty-four hospitals complied with this minimum standard curriculum and are accredited schools, according to the statement of their State Board of Nursing in their respective states. There are a number of other hospital training schools that in the main conform to our schedule but in the instance of these latter hospitals, it has seemed wise to more carefully go into their requirements and credentials which will necessitate further correspondence.

Your committee feels that a very distinct step in advance has been made toward standardizing the training schools of mental hospitals in this country and Canada, and we have at last got a basis upon which it seems fair to say that we will soon be well established with a resulting improvement in the work and status of mental hospital training schools.

Your committee therefore recommends that the hospitals named on the attached list should be accredited schools and that a certificate to that effect be issued to these schools.

If this report of the committee is accepted it would necessitate a small appropriation for the Committee on Nursing for the preparing of certificates and the issuing of these. It is thought that an appropriation of $100 would cover this work.

Respectfully submitted,

ARTHUR H. RUGGLES, M. D., *Chairman.*

LIST OF ACCREDITED SCHOOLS—UNITED STATES AND CANADA.

ALABAMA.

The Bryce Hospital, Tuscaloosa, Ala.

CONNECTICUT.

Connecticut State Hospital, Middletown, Conn.

DISTRICT OF COLUMBIA.

St. Elizabeth's Hospital, Washington, D. C.

GEORGIA.

Georgia State Sanitarium, Milledgeville, Ga.

ILLINOIS

Elgin State Hospital, Elgin, Ill.

Lincoln State School & Colony, Lincoln, Ill.

Peoria State Hospital, Peoria, Ill.

Watertown State Hospital, East Moline, Ill.

MAINE.

Bangor State Hospital. Bangor, Maine.

MARYLAND.
Crownsville State Hospital, Crownsville, Md.
MASSACHUSETTS.
Boston State Hospital, Boston, Mass.
Danvers State Hospital, Hathorne, Mass.
Grafton State Hospital, No. Grafton, Mass.
McLean Hospital, Waverley, Mass.
Medfield State Hospital, Harding, Mass.
Monson State Hospital, Palmer, Mass.
Taunton State Hospital, Taunton, Mass.
Worcester State Hospital, Worcester, Mass.
MICHIGAN.
Newberry State Hospital, Newberry, Mich.
NEW HAMPSHIRE.
New Hampshire State Hospital, Concord, N. H.
NEW YORK.
Binghamton State Hospital, Binghamton, N. Y.
Bloomingdale Hospital, White Plains, N. Y.
Brooklyn State Hospital, Brooklyn, New York.
Buffalo State Hospital, Buffalo, N. Y.
Central Islip State Hospital, Central Islip, N. Y.
Hudson River State Hospital, Poughkeepsie, N. Y.
Kings Park State Hospital, Kings Park, N. Y.
Manhattan State Hospital, Ward's Island, N. Y.
Middletown State Homeopathic Hospital, Middletown, N. Y.
Rochester State Hospital, Rochester, N. Y.
St. Lawrence State Hospital, Ogdensburg, N. Y.
Utica State Hospital, Utica, N. Y.
Willard State Hospital, Willard, N. Y.
NORTH CAROLINA.
State Hospital, Dix Hill, Raleigh, N. C.
PENNSYLVANIA.
Danville State Hospital, Danville, Pa.
The Mercer Sanitarium, Mercer, Pa.
Pennsylvania Hospital, Department for Mental and Nervous Diseases, Philadelphia, Pa.
Pittsburgh City Home and Hospitals, Mayview, Pa.
Warren State Hospital, Warren, Pa.
RHODE ISLAND.
Butler Hospital, Providence, R. I.
State Hospital for Mental Diseases, Howard, R. I.
CANADA.
Psychopathic Hospital, Winnipeg, Man.
Ontario Hospital, Whitby, Ont.
Nova Scotia Hospital, Dartmouth, N. S.
(Chemistry?)

The report of the Committee on Nursing was accepted as read.

The President then called for the report of the Auditors.

Dr. Harris read the following report of the Auditors:

The Auditors have gone over the records of the Secretary-Treasurer, comparing all vouchers, sub-vouchers, and checks and found the report as made by the Secretary-Treasurer correct.

The report of the Auditors was accepted as read.

The President announced that the report of the Committee on Resolutions and the report of the Committee on Standards and Policies would be laid over until Friday morning.

THE PRESIDENT.—In taking up the scientific session of the Association, the Chair would call attention to the necessity for the readers and speakers to observe the time allotted.

The first paper is entitled: "Organic Processes without Structural Change," by Dr. Samuel T. Orton of Iowa City, Ia., omitted from the morning program.

Dr. Orton then read his paper.

The President then called for the paper of Dr. Martin W. Peck, of Boston, Mass., on "Mental Examinations of College Men," and the paper of Dr. L. B. Alford, of St. Louis, Mo., on "Dementia Præcox as a Degenerative Condition," these papers having been omitted from the morning program.

The President next called for the paper on "Aseptic Acute Exudative Meningitis in the Treatment of Dementia Præcox," by Dr. Robert S. Carroll, Dr. Everett S. Barr, Dr. R. Grant Barry, Dr. David Matzke and Dr. W. W. Young.

This paper was read by Dr. Barr.

The paper was discussed by Drs. Cotton and Barry, and by Dr. Barr in closing.

THE PRESIDENT.—The next paper on the program is by Dr. E. A. Strecker and Dr. G. F. Willey of Philadelphia, on "Epidemic Encephalitis—A Report of Three Cases Complicated by Pregnancy, and of Experimental Therapy on a Group of Patients." The paper will be read by Dr. Strecker.

Dr. Strecker's paper was discussed by Drs. Solomon and Darling, and by Dr. Strecker in closing.

The Chair announced the next paper by Dr. E. D. Bond and Dr. G. E. Partridge, of Philadelphia, the paper to be read by Dr. Bond.

The Chair then called for the next paper on the program by Dr. F. P. Moersch, of Rochester, Minn., on "Some Psychic Manifestations Observed in Cases of Brain Tumor," which was discussed by Dr. Mitchell.

The Secretary announced that owing to the small number signifying their desire to attend a round table conference on veterans problems, that the round table on that subject had been combined with that of occupational therapy. He also announced the various rooms in which the Round Table Conferences would meet.

The Association, on motion, then adjourned.

Thursday Evening.

Round Table Conferences.

The Round Table Conferences were held in five groups. Administration, under the Chairmanship of Dr. Isham G. Harris; Clinical Psychiatry, of which Dr. C. O. Cheney was Chairman; Social Psychiatry, presided over by Dr. William Healy; Occupational Therapy, with Dr. Wm. R. Dunton, Jr., as Chairman; and Laboratory Problems, under the leadership of Dr. F. P. Moersch.

The discussions, both during the dinner and those of a more formal character after dinner, were animated and brought forth many points of interest.

Friday, June 6, 1924.

Morning Session.

The Association was called to order by the President at 10.00 a. m.

The President announced as the first order of business the report of the Council to be read by the Secretary.

Report of the Council.

A meeting of the Council was held Friday, June 6, at 9.30 a. m.

The Council voted to appropriate $300 from the Association Treasury to the Committee on Statistics for its work in conjunction with the statistical work of the National Committee for Mental Hygiene.

The Council was informed that several members of the Association who had signed for Round Table Conference Dinners had failed to attend such dinners, and it was on motion

Voted, That the Secretary be directed to announce that a number of those who had signed for the Round Table Conference Dinners had failed to pay for them and that he be directed to request that they do so immediately.

It was, however, further

Voted, That the Association would pay any balances due which individual members failed to pay, it being understood that the amounts so paid by the Association would be charged against the individual members concerned when bills for dues were sent to them.

On motion the Council adjourned, until the 1925 meeting.

The report was on motion, duly seconded, adopted.

The President next called for the report of the Committee on Standards and Policies.

In the absence of the Chairman, Dr. Russell, the report of the Committee on Standards and Policies was read by Dr. English.

REPORT OF THE COMMITTEE ON STANDARDS AND POLICIES.

In a brief report presented last year, the Committee on Standards and Policies proposed that, this year, if the Association so desired, it might present a plan for determining a minimum standard for a few of the major fundamentals essential to a good service in hospitals for mental disorders. The committee understands that the purpose which the Association has in view, is the formulation of minimum standards which may be issued as an authoritative statement, and used as a means of raising the general level of hospital service throughout the country. Similar methods have recently been applied by other medical organizations in shaping the standards of the general hospitals and the tuberculosis hospitals and sanatoria, and, in many other fields of endeavor, standardization is finding a wide range of application.

The Association has already undertaken, through the work of special committees, to formulate minimum standards for different departments of the hospitals, and the valuable reports presented last year by the Committee on Pathological Investigation and Laboratories, the Committee on Occupational Therapy, and the Committee on Nursing, are examples of the usefulness of this method. All will have in mind also what has been accomplished by the standardization of statistical work in the hands of the Committee on Statistics. Whether or no a general scheme of standardization is adopted, the work of such specially qualified committees in shaping the standards of the many departments and kinds of work which are carried on in the hospitals, will continue to be necessary. In view, however, of the advantages of classifying hospitals with regard to some outstanding fundamental essentials which have apparently been demonstrated by the application of the method to the general hospitals, and the steady extension of the method, it seems unlikely that the hospitals for mental diseases will much longer escape similar classification by some national organization. In fact,

these hospitals already come within the scope of the approval of hospitals for internes of the American Medical Association, and other organizations and official bodies which are concerned with various departments of hospital work may employ similar methods.

The nursing organizations will probably undertake the classification of hospitals with reference to nursing interests. The Rockefeller Committee on Nursing Education, the report of which has been accepted with approval by the nursing organizations, has declared that hospitals for nervous and mental disorders, in common with all other special hospitals, are not suitable places for independent schools of nursing and should be restricted to giving courses in the specialty to students of affiliated general hospital schools. It is noteworthy, also, that the official nurse inspectors of registered schools are extending their inspections and the substance of their reports so as to include the physical condition and administration of the hospitals as they relate to the nursing care of the patients, and the living as well as the working conditions of the students and nurses. Similar activity may also be expected from other organizations. In a movement as general as this, it would seem advisable for the Association to take a hand, and if the hospitals for mental disorders are to be classified, and listed with reference to some designated standards, the Association is the organization pre-eminently competent to undertake the task.

Two national organizations at least, have been engaged in the standardization of the general hospitals, each for a different purpose from the other. The Council on Medical Education and Hospitals of the American Medical Association, has adopted a schedule of essentials in a hospital approved for internes and has prepared, for the information of medical schools and prospective internes, a list of hospitals which present these essentials. Some of the hospitals for mental disorders are included in this list, though a recent communication from the Council seems to indicate that approval may, hereafter, be given only for a period of instruction and experience in psychiatry. The hospitals are listed in accordance with information received by means of a questionnaire. The conditions required relate to the character of the medical staff, the staff conferences and medical meetings, the equipment and facilities for clinical and pathological study and practice, the case histories and record system, the systematic training and experience furnished the internes, the capacity of the hospital, the living and working conditions, and some miscellaneous items. The American College of Surgeons has classified the general hospitals with reference to four fundamentals which were selected as those which were essential to securing a good hospital service for the individual patient. They are referred to as "four fundamentals without which no institution is worthy the name of hospital," and are as follows:

(1) A properly qualified and well-controlled medical staff, operating under policies and rules initiated by the staff, and maintained at a high standard by means of staff conferences at which the clinical work of the members is reviewed and analyzed.

(2) Adequately equipped and manned laboratories.

(3) Carefully prepared case records in charge of a historian under the direction of a record committee.

(4) The prohibiting of division of fees, or fee-splitting.

It was at first expected by the College of Surgeons that the hospitals might be classified by means of the questionnaire method. This method was, however, found to be inadequate and funds were obtained for the employment of inspectors who visit the hospitals and make reports. The work is now well organized on a permanent footing and has accomplished a distinct advancement in the general level of standards in the general hospitals.

The tuberculosis hospitals and sanatoria present conditions which, in some respects, correspond more closely than those of the general hospitals with the conditions found in the hospitals for mental disorders. The American Sanatorium Association has adopted a rating system for the standardization of these institutions. The ratings are applied to nearly every detail of the institutions under the following general headings:

(1) Location and general sanitary requirements.

(2) Plant and equipment.

(3) Administration.

(4) Medical.

Each heading and each subdivision or schedule under each heading, is given a value, and each item of the schedule is rated numerically on a scale of 100. The ratings of so many items must require a remarkably careful examination of the institutions, and no outstanding essentials are selected as fundamental, though the valuation given to the different schedules varies greatly. The final classification is expressed as:

A, or Excellent, for institutions with a final rating of 90 to 100; B, or Good, for those with a rating of 80 to 89; C, or Fair, for those with a rating of 70 to 79. Those with a rating below 70 are designated as "not qualified." Reports obtained from the institutions are used as a basis for a preliminary rating and classification, but only the institutions which have been inspected are placed on the published lists.

These references show that, if this Association should undertake to classify the hospitals for mental disorders according to minimum standards agreed upon, it would be doing for these hospitals nothing more than is being done for other types of hospitals by their representative organizations. The advantages to the hospitals are that advancement is stimulated and shaped along generally accepted standards, and the hands of the physicians who aim at superior service are strengthened in obtaining financial and administrative support.

Of the methods which are being employed, the committee believes that, while that of the American Sanatorium Association is applicable to the hospitals for mental disorders, it would require that minimum standards for the location, construction, equipment, organization, and administrative and scientific work of the institutions would have to be agreed upon and a very careful study made of the plant and of every department. The method of selecting a few fundamental essentials and classifying the hospitals with reference to these, which is employed by the American College of Surgeons

and the American Medical Association, offers the advantages of greater simplicity, and of concentration on a few main issues to which others may be added as occasion arises. In every kind of organized work there are a few outstanding essentials to which everything else is supplementary. It may not, in the hospitals for mental disorders, be as easy to fix upon those fundamentals which all will agree to be the main essentials to a good service, as it was in the general hospitals. The conditions under which the hospitals for mental disorders operate, and the social and economic basis of their support vary considerably in different places. The problems of housing, subsistence, sanitation and simple humane care must be solved before support can be obtained for the more distinctly medical and scientific requirements. Fortunately, in most places, the more elementary needs have been supplied, and a level has been reached at which the medical needs and standards are receiving much attention and support. If these are kept constantly in the foreground, the development of the hospital and its work will be on sound lines, and its usefulness will be more and more clearly understood and valued by the community by which it is supported. It would seem advisable, therefore, in starting a scheme of standardization, to concentrate on these. All will agree that no institution for the treatment of mental disorders which is without an adequate medical organization and proper equipment for the clinical and psychiatric examination and treatment of its patients, is worthy of the name of hospital.

With this in mind, the committee has prepared the following outline to be used as a basis for determining a minimum standard on which to classify the hospitals:

(1) The chief executive officer must be a well qualified physician and experienced psychiatrist.

(2) All other persons employed at the institution ought to be subordinate to him and subject to removal by him if they fail to discharge their duties properly.

(3) The positions and the administration of the institution must be free from control by partisan politics.

(4) There must be an adequate medical staff of well-qualified physicians; the proportion to total patients to be not less than 1 to 150, and to the number of patients admitted annually not less than 1 to 40. There must also be adequate provision for dental work.

(5) There must be a staff of consulting specialists employed under such terms as will insure adequate services. A record of their visits must be kept.

(6) The medical staff must be organized, the services well defined and the clinical work under the direction of a staff leader.

(7) Regular staff conferences must be held at least once a week where the work of the physicians and the examination and treatment of the patients will be carefully reviewed. Minutes of the conferences must be recorded.

(8) The patients must be classified in accordance with their condition and most important requirements.

(9) The classification must include a reception and intensive treatment unit, and a unit for physical illnesses, and surgical cases of adequate capacity, equipment, and medical and nursing staff.

(10) Each medical service must be provided with an office and an examining room, containing sufficient conveniences and equipment for the work to be performed, and with such clerical services as may be required for the keeping of the medical and administrative records.

(11) There must be carefully kept clinical histories of all the patients, in proper files for ready reference.

(12) The hospital must be provided with adequate laboratories and an X-ray department properly equipped and manned, or provision made for having such work as cannot be performed, attended to at other laboratories.

(13) There must be a working medical library and journal file.

(14) The treatment facilities and equipment must include:

(a) A surgical operating room.

(b) A dental department.

(c) Hydrotherapy equipment including tubs for prolonged baths.

(d) Examination rooms for the specialties in medicine and surgery.

(e) Provision for occupation and training in occupation, physical exercise and reaction for all patients who are in condition to utilize it.

All the above to be adequately equipped and manned.

(14A) There should be an out-patient clinic and social workers.

(15) There must be an adequate nursing force, not less than a proportion to total patients of 1 to 8, and in the intensive treatment and sick and surgical services not less than 1 to 4.

(16) The hospital must not be so grossly overcrowded as to prevent adequate classification and treatment.

(17) Mechanical restraint and seclusion must, if used at all, be under strict regulations and a system of control by the physicians, and limited to the most urgent conditions.

The above outline indicates what the committee believes might, with advantage, be adopted as the essentials for a Class A Hospital. There are, to be sure, many other essentials but the probabilities are that a hospital which presented the standards given in the outline would not be found wanting in most of the others.

The committee believes, however, that if the Association should under take the standardization of the hospitals, the next step should be to send out a questionnaire based on the outline. It will hardly be prudent to adopt a schedule of minimum standards, without first ascertaining the present conditions and standards in the different hospitals and determining what they can reasonably be expected to establish. It should be realized also that it would be useless for the Association to undertake a standardization project without being able to provide funds for inspectors' salaries and expenses and for clerical service. The American College of Surgeons obtained support from the Carnegie Foundation and possibly this Association might secure funds from this or some other similar source. The work once started should be progressive and continuous for an indefinite period.

In conclusion, the committee begs to recommend: (1) That the Association take some action on the question as to whether or not it is disposed to undertake the standardization of the hospitals for mental disorders on the lines outlined above. (2) That, if the project is to be undertaken, the Association authorize the Committee on Standards and Policies, or perhaps, a special committee on hospitals, to employ some method for the collection of the preliminary information needed for the formulation of the minimum standards to be adopted by the Association. (3) That a report be made to the Association at the 1925 meeting in which the minimum standards recommended by the committee and a practical method of carrying out a plan of standardization be submitted for further consideration.

W. L. RUSSELL, *Chairman*,
W. M. ENGLISH,
S. T. ORTON,
C. MACFIE CAMPBELL,
Committee.

Dr. English moved the adoption of the report.

DR. COPP.—In seconding the motion for the adoption of this report, I wish to say a few words in emphasis of certain recommendations made in the report itself. I know from conversation with Dr. Russell, chairman of the committee—I am not on the committee myself—that he feels this is a very important undertaking and that if it is undertaken at all, it should be with the clear understanding of what is involved. If the work of the committee this coming year in sending out the questionnaire and getting the facts on which to evaluate ourselves, as it were—if that is done, and the matter stops there, of course the whole procedure will amount to nothing. It is the idea of the committee that this is simply a beginning, a basis on which to formulate a plan. It is intended that the Association shall go on and do a piece of definite, constructive work which will be worth while. It means that the data obtained through our own reports must be checked up by inspectors in a careful examination and personal ascertainment of the facts. This, of course, will require funds, which must be obtained probably in some special way to be determined during the coming year. It is important that we enter upon this project with the determination that it shall end, not simply in a report of aspirations and estimates of ourselves, but in a dependable rating of the hospitals and fixing of worthy standards.

DR. DEVLIN.—I thoroughly agree with the recommendations made in this report, but there is another aspect to the subject which should be considered. For the proper medical administration of any institution, one of the essentials is continuity of service. If a medical superintendent finds that his financial budget is of such a nature that he cannot pay competent men to make the work their life work, he is constantly embarrassed with the situation of change of the medical staff. Whilst we should make every possible demand upon the medical men joining our staff, it does seem to me that we should make some specifications as to the proper remuneration they

should receive. In this regard, I believe we can turn with profit to the example set by the old countries, England and France, where they have further adopted in their system a means whereby a man after years of service, even though he is not a medical superintendent, can look forward to the prospect of some remuneration that will be offered to him on his retirement.

There is no object gained in making martyrs of ourselves when the situation does not call for the same. We do not ask for very much. At best the men at the head of the service in this country and other countries are often inadequately paid for the same. I therefore think that this aspect of the subject should be considered and recommendations made thereon by the Committee on Standards and Policies.

DR. CARMICHAEL.—In view of the fact that in the formulation of the plans submitted by your Committee on Standards and Policies, which is no doubt an ideal conception, they must be made applicable to all sections of the United States where a wide variety of economical and administrative conditions exist. It must be recognized that the realization of this ideal may be slow in development. In the Middle West we have not advanced with the same rapidity as the Eastern States, and we are facing today conditions and obstacles that have been long ago met and conquered by the New England States. The difficulty in the attainment of the ideal in hospital administration in the Middle West where progression is slow, is largely due to lack of public understanding and public interest in these philanthropies.

I believe that the formulation of a standard such as has been submitted by your committee should, to be effective, be made so impressive that legislative bodies, who largely control the destinies of our insane institutions in the Middle West, may be impressed that without attaining this ideal standard they are remiss in the performance of their public duty.

DR. MITCHELL.—This committee report should be welcomed by everyone interested in psychiatry or improvement in hospital service. It is formulated by men who desire to have its recommendations followed solely for the purpose of giving aid and support to those of us who may need it most. Very properly it calls for a full survey of conditions affecting hospital work throughout the country and a digest of such information as may be obtained from the questionnaire to be sent out. No one need to refrain from reporting fully the difficulties encountered in their local work, or the unfavorable features of state control or supervision.

The report to be expected later will, unquestionably, present for consideration the requirements of service to be expected in our work, bringing in concrete form to our members the ideals of psychiatric hospital practice. It is an effort comparable to the work done in other fields of medicine and cannot fail to have educational value for the public. Especially do legislatures and those responsible for the operation of our public hospitals need the information to be compiled by the committee. Our legislators are generally humane and willing to furnish necessary provisions for the ill, when the necessity for their action is suitably presented. They can hardly

be expected to take the initiative in a manner that would meet our requirements. It remains for us to present such measures as are required for their consideration and the proposed action of the committee in formulating standards for hospital service, when submitted to the Association and marked by its approval, will be the best possible argument that can be presented to support any attempt to bring into operation better medical service for mental cases.

I wish to second the adoption of this report and to express the hope that each member will give the committee every possible help in its onerous task.

The motion of Dr. English for the adoption of the report was carried.

The President announced as the next order of business the report of the Committee on Resolutions, which was read by Dr. Baber, Chairman.

REPORT OF COMMITTEE ON RESOLUTIONS.

The Committee on Resolutions would express to the citizens of Atlantic City and the State of New Jersey and their official representatives the appreciation of the members of The American Psychiatric Association for the courtesies extended during the Eightieth Annual Meeting of the Association which have aided in making the meeting a delightful occasion.

The Chairman of the Committee on Arrangements, Dr. Marcus A. Curry, deserves our acknowledgment for the smooth and easy running of the sessions in general. On behalf of our guests we wish to thank him for the coupon booklets entitling them to participate in the many complimentary attractions. His committee should receive our congratulations for the attractive design of the identification badges which we have been proud to wear. We would ask Dr. Curry to give our thanks to the local director of the United States Weather Bureau for the ideal convention atmospheric conditions he has provided for us.

For the third year Dr. Harry C. Solomon, Chairman of the Program Committee, has prepared a program that in scope, interest and scientific value marks a significant period in the history of the Association.

For the past three years Dr. C. Floyd Haviland through his faithful service has advanced the interests of the Association and as he leaves the post of Secretary-Treasurer to assume the office of Vice-President, the Association is found in all ways strengthened.

Dr. Thomas W. Salmon has presided over the meetings of the Association with dignity, despatch, wit and understanding. His masterly address will be a source of inspiration and guidance for the future. His council and advice as President of the Association has been wise and farseeing.

The committee would present the following resolutions:

(1) *Resolved*, That this Association reaffirms the regulations announced several years ago in regard to papers the titles of which are given a place on the programs of its annual sessions, as follows:

Members of the Association and others who are accorded a place on the program for any annual meeting of the Association are required to be present and prepared to read the paper announced at the time set apart for such paper. In case of inability to be present, an explanation must be forwarded to the Secretary before the time announced for the reading of the paper together with a copy thereof, which may then be read, in full or by title as the Association may decide.

No paper can be set down as read by title which is not in the hands of the Secretary before the opening of the session at which it was announced to be read.

All papers must be handed to the Secretary as soon as read and in condition to be published without revision by the author.

Papers should be typewritten, double-spaced. All references should state clearly the source of quotations, with full title of book or journal, year of publication, volume and page, and be carefully verified by the author.

Except in case of papers pertaining to research work, either clinical or laboratory, the rule limiting papers to 20 minutes should be observed. Papers should, except in the above cases, be in ordinary circumstances limited to 12 to 18 pages when in type.

Resolved, further, That a copy of this resolution be sent by the Program Committee for each annual meeting, to all persons given a place on the program for the meeting.

(2) *Resolved:*

(1) That the Association approve of the classification of the hospitals for mental disorders of the country along the lines outlined in the report of the Committee on Standards and Policies.

(2) That the Committee on Standards and Policies be authorized to request from the hospitals and other sources the preliminary information required for determining the minimum standards which the hospitals can be reasonably expected to establish and maintain.

(3) That the Committee on Standards and Policies be instructed to report at the 1925 meeting of the Association the schedule of minimum standards which it is prepared to recommend and a practical plan for the classification of the hospitals by the Association.

(3) WHEREAS, The adoption by this Association of the minimum standard of curriculum for training schools for nurses has resulted in establishing a standard for such schools, therefore be it

Resolved, 1 That all hospitals be encouraged to adopt this minimum standard; 2 That the 44 nurses' training schools recommended by the Committee on Nursing be accepted as accredited schools by the Association and 3 That the Committee on Nursing be authorized to present certificates as accredited schools to them.

(4) *Resolved,* That a committee be appointed to study and investigate the legal aspects of psychiatry with special reference to difficulties arising in the field of psychiatric expert testimony and report at the next meeting of the Association with recommendations.

(5) WHEREAS, The future welfare of the country is seriously affected by the admission of aliens physically and mentally defective, and

WHEREAS, The members of this Association bear the responsibility for treatment of the insane and have, therefore, immediate and personal knowledge of the difficulties placed upon the citizens of this country by the admission of those who are mentally defective or suffering from mental disorder, therefore be it

Resolved, 1 That the Association seek the coöperation of other medical associations in the development of an adequate system of medical and psychiatric examination of all arriving aliens; 2 That the Secretary of Labor be requested to receive with serious consideration appeals of states to be relieved of their burden in caring for alien insane (especially those admitted on bond); 3 That copies of these resolutions be sent to the Secretary of Labor, the Secretary of the Treasury, the Surgeon General of the United States Public Health Service, and the Commissioner General of Immigration, and 4 That each member of the Association be supplied with printed copies of these resolutions and be urged to bring the matter to the attention of his Senators and Representatives in Congress.

(6) WHEREAS, The National Research Council has appointed a committee on the scientific study of race migration which is engaged in a comprehensive biologic study of factors entering into the problem of race migration, and

WHEREAS, One of the most significant factors in the problem of immigration is that of mental disorder, therefore be it

Resolved, That the attention of the National Research Council be called to the fact, that the committee on the scientific study of race migration contains no representative of the field of psychiatry and that the committee be urged to add to its group a competent psychiatrist.

(7) WHEREAS, William Crawford Gorgas understood the important part that nervous and mental disorders would play in the problems of the Medical Corps of the Army; and

WHEREAS, He was quick in his decision to place the responsibility for the solution of these problems in the hands of the psychiatrists of the country, thereby making possible the organization in the Office of the Surgeon General of the Division of Neurology and Psychiatry; and

WHEREAS, The Gorgas Memorial Institute contemplates the establishment in his memory of a living, working memorial in the form of:

(a) A research institute at Panama for the study, prevention and cure of tropical diseases, and

(b) The development of a national educational campaign under the supervision of the scientific medical profession for the purpose of improving and protecting the health of people everywhere, therefore be it

Resolved, In consideration of these facts, that The American Psychiatric Association, assembled at its annual convention at Atlantic City, June 3d to June 6th, 1924, hereby heartily endorses the plan to memorialize William Crawford Gorgas in the manner contemplated by the Gorgas Memorial Institute, not only because it will constitute a worthy recognition of the

character and achievements of our late distinguished colleague, but will in effect be a memorial to the efficiency and importance of medical science in world progress.

RICHARD DEWEY, *Chairman,*
FRANKWOOD E. WILLIAMS,
E. A. BABER.

It was regularly moved and seconded that the report of the Committee on Resolutions be adopted. Motion carried.

Dr. Frankwood E. Williams reported progress on the production of the second edition of the War Work Report.

The Secretary announced the registered attendance at the meeting as 270 Fellows and Members, and 210 guests, making a total of 480, the largest attendance in recent years.

THE PRESIDENT.—We are now ready to proceed to the final scientific session. Everybody who is aware of the conditions of living in Massachusetts realizes that an expert on homicide can be spared for only a few minutes. As Dr. Stearns is anxious to get away, we will have his paper first. I am just notified that Dr. Stearns had to leave, and so I fear there has been another homicide.

The next paper is entitled, "What is Mental Hygiene? A Definition and an Outline," by Dr. E. Stanley Abbot, of Boston, Mass.

Then followed "General Paralysis of the Insane during Senescence," by Dr. Ira A. Darling, of Warren, Pa.

Dr. Darling's paper was discussed by Dr. Wholey.

"Prolonged Confusional States Stimulating Dementia Præcox—Differential Diagnosis," by Dr. Alfred Gordon, of Philadelphia, Pa., was then presented. This paper was discussed by Dr. Mayer, and by Dr. Gordon in closing.

THE PRESIDENT.—The next paper on the program is entitled, "Industrial Neuroses," by Dr. Michael Osnato, of New York City. Dr. Osnato is absent from entirely unpreventable causes. This makes a record of every individual but one who has been assigned a paper on the program being here to present it. Dr. Stearns was here but could not remain long enough to present his paper.

There now remains only a simple ceremony that involves sorrow for one of its participants and joy for the other. At the end of a meeting of the Association the President comes face to face with one of the great tragedies of life—that just as soon as an office-holder gets good at something and wants to hang on to it for life the rising tide of public opinion forces him to relinquish it. The keenness of one so forced out can be realized if we think for a moment of the difference in the outlook and social reactions of a president in the morning and that same individual as an ex-president in the afternoon. If I had met the Chief Executive of our country

on the boardwalk this morning, I could have greeted him with "How do you do, Mr. President?" and if he had noticed me at all he would have had to reply in the same words. In five minutes if I go out on the boardwalk and meet Doctor Cook, I might say "How are you, old down-and-outer?" and he would doubtless say the same to me.

The only consolation is the right to join the rapidly aging group of ex-presidents sitting in a corner of the room at the next meeting and reminding each other of the greatness of the Association in former years and its recent deterioration. Nevertheless, no man is ever quite the same after having wielded the vast authority of a President of this Association. Think of what it means in the life of a human being to have appointed a Committee on Storage of Unbound Copies of Proceedings of the Association and know that that action is not subject to review. Think of what it means to lean over the ear of the Secretary, unblushingly, before the whole Association, while some great man is reading a paper, and whisper to him. Of course what a President says to a Secretary at a time like that is an official secret. It may be a matter of great moment or merely a query as to whether, in his experiences, nurses are easier to look at than occupational therapists. Think of what it means to strike the table with a gavel when a member has used up his 20 minutes and look unmoved into his mute pleading eyes.

Then, in a moment, all that is changed. The ex-president goes home and fights his way into the subway with none so poor as to do him reverence. He takes up with his landlord the question of a little extension in the matter of rent and that person looks at him with the same hard glare that, a few hours before, he turned upon the over loquacious reader of a paper. On one day his remarks are not only listened to but taken down for posterity to read—even if they consist only of "It is so ordered." The next day he tries to give wise counsel to a son leaving for college and to get the last word in has to pursue him up the street. I realize, however, that these private griefs are not for this public place and so I will desist and conduct into office my distinguished successor.

The kind of leadership that has just departed from me and which I have, perhaps, bemoaned too much at length is, after all, a brief and fleeting one. There is another kind of leadership which endures forever, regardless of the rewards that men bestow. That is intellectual leadership, the leadership of brains. In this the gentleman who is to succeed me has no equal in our department of medicine. He has been for years the teacher, guide and inspiration of us all. I wish Dr. White the greatest happiness and success in his term of office as President of The American Psychiatric Association but there can be no better fortune coming to him than that of which he is already certain—presiding over the most kindly and most tolerant group of men and women in the world.

I will ask Dr. Brush and Dr. Anderson to escort Dr. White to the Chair.

DR. WHITE.—*Mr. Ex-President, Ladies and Gentlemen:* I feel, of course, the very profound opportunity, honor and significance of this occasion. Probably the most affective and significant aspect of it occurred a year ago when my name was put in nomination by my former chief, Dr. Charles G.

Wagner, and it is only necessary for me to mention his name to bring to all of your minds and your hearts a very similar recollection, picture and feeling.

I shall endeavor to perform the functions of this office with as much grace and as much efficiency as my predecessor. I would like to call his attention, however, to some significant things that apparently in the pessimism which has overwhelmed him in the last moments of his office, he may have forgotten all about. This after all is a relatively civilized age, and there is much human kindliness in the world, and it is represented by this Society. If a few thousand years ago Dr. Salmon, instead of being President of the American Psychiatric Association, had been the chief of a tribe and that tribe in four days had dwindled in its numbers as rapidly as this tribe has in four days, the members of the tribe would have attributed that consequence to the failing virility of its chief. They would have taken him out in the woods and knocked him in the head and elected a younger and more virile man to take his place.

I shall try to gather together the remnants of the psychiatric army which have been left to me as the result of the incompetence of my predecessor and go forward in the following year, so that I may hope to assure you that at the end of that time we will be in shape to make a frontal attack upon psychiatric thought in this country. Then after that I do not know what will happen. Probably somebody will knock me in the head. In the meantime we will go forward joyfully and hopefully to whatever the future has to offer us, and I hope and know I shall have the loyal and efficient support of the organization as a whole and individually.

The Association then adjourned at 12.30 p. m. to meet in Richmond, Virginia, in 1925.

C. FLOYD HAVILAND, *Secretary*.

Notes and Comment.

STANDARDIZATION OF HOSPITALS.—A year ago the JOURNAL had something to say regarding hospital standardization. The Committee on Standards and Policies, but recently appointed, had made its first report, published in the proceedings of the Association for 1923 in the same issue of the JOURNAL that contained our comments.

It was not with any intention of attempting to influence the deliberations of the committee that our remarks were published, but with the intention of impressing upon the members of the Association the fact that methods of standardization were being considered, were in our opinion bound to be formulated and adopted, and should receive the support and hearty cooperation of every hospital administrator.

We now have the second report of the committee before us, published in the proceedings of the Association in this issue of the JOURNAL, and we urge its careful reading upon every one of our readers.

The report is in our opinion a most able study of the situation; a situation which is bound, we believe, sooner or later to confront every hospital for mental and nervous disorders and the exigencies of which must be met.

There has always been a certain amount of criticism of our mental hospitals from both lay and professional sources. Much of this has been based upon an imperfect understanding of the real situation; some of it has been of a distinctly prejudiced character; and a large proportion has been of a destructive rather than a constructive type.

The Association, formed for the distinct purpose of the interchange of ideas and experiences in hospital management, and the care of mental cases, has, from its inception eighty years ago, striven to improve the condition of hospitals, enlighten public opinion, and stimulate a worthy rivalry among its members in all that relates to better methods of hospital care and scientific research in psychiatry.

The time has come, however, in the opinion of the Committee on Standards and Policies, when a minimum standard at least must be formulated for mental hospitals, just as similar action has been taken by other organizations, notably the American College of Surgeons, in regard to general hospitals and the American Sanatorium Association which has adopted a rating system for the standardization of institutions for the tuberculous. Already, as the committee intimates, the Association has, through special committees, done something in the way of standardization. The Committee on Nursing last year presented a report which was adopted carrying with it the adoption of a minimum standard curriculum for training schools for nurses in mental hospitals, and the report of the same committee this year contains a list of accredited schools.

The standards of other branches of hospital activity have already been fixed or a desirable standard outlined and it is but a step therefore between partial standardization and the erection of a minimum list of essentials which all hospitals must attain in order to be accepted by the Association as a properly qualified institution for the care of mental and nervous patients.

As a basis for determining a minimum standard of classification, the committee has prepared the following outline:

(1) The chief executive officer must be a well-qualified physician and experienced psychiatrist.

(2) All other persons employed at the institution ought to be subordinate to him and subject to removal by him if they fail to discharge their duties properly.

(3) The positions and the administration of the institution must be free from control by partisan politics.

(4) There must be an adequate medical staff of well-qualified physicians; the proportion to total patients to be not less than 1 to 150, and to the number of patients admitted annually not less than 1 to 40. There must also be adequate provision for dental work.

(5) There must be a staff of consulting specialists employed under such terms as will insure adequate services. A record of their visits must be kept.

(6) The medical staff must be organized, the services well defined and the clinical work under the direction of a staff leader.

(7) Regular staff conferences must be held not seldomer than once a week where the work of the physicians and the examination and treatment of the patients will be carefully reviewed. Minutes of the conferences must be recorded.

(8) The patients must be classified in accordance with their condition and most important requirements.

(9) The classification must include a reception and intensive treatment unit, and a unit for physical illnesses, and surgical cases of adequate capacity, equipment, and medical and nursing staff.

(10) Each medical service must be provided with an office and an examining room, containing sufficient conveniences and equipment for the work to be performed, and with such clerical services as may be required for the keeping of the medical and administrative records.

(11) There must be carefully kept clinical histories of all the patients, in proper files for ready reference.

(12) The hospital must be provided with adequate laboratories and an X-ray department properly equipped and manned, or provision made for having such work as cannot be performed, attended to at other laboratories.

(13) There must be a working medical library and journal file.

(14) The treatment facilities and equipment must include:

(a) A surgical operating room.

(b) A dental department.

(c) Hydrotherapy equipment including tubs for prolonged baths.

(d) Examination rooms for the specialties in medicine and surgery.

(e) Provision for occupation and training in occupation, physical exercise and reaction for all patients who are in condition to utilize it.

All the above to be adequately equipped and manned.

(14) There should be an out-patient clinic and social workers.

(15) There must be an adequate nursing force, not less than a proportion of 1 to 8, and in the intensive treatment and sick and surgical services not less than 1 to 4.

(16) The hospital must not be so grossly overcrowded as to prevent adequate classification and treatment.

(17) Mechanical restraint and seclusion must, if used at all, be under strict regulations and a system of control by the physicians, and limited to the most urgent conditions.

The very painstaking report of the committee was adopted and subsequently the Association adopted the following:

Resolved:

(1) That the Association approve of the classification of the hospitals for mental disorders of the country along the lines outlined in the report of the Committee on Standards and Policies.

(2) That the Committee on Standards and Policies be authorized to request from the hospitals and other sources the preliminary information required for determining the minimum standards which the hospitals can be reasonably expected to establish and maintain.

(3) That the Committee on Standards and Policies be instructed to report at the 1925 meeting of the Association the schedule of minimum standards

which it is prepared to recommend and a practical plan for the classification of the hospitals by the Association.

When the work outlined in the report is undertaken it will require the expenditure of a vast amount of time and energy on the part of those having it in charge, and there must be available a considerable sum of money to meet the expense of the study of hospitals and hospital methods and personnel involved. It is most sincerely to be hoped that the financial requirements of the situation can be met.

NEW SECRETARY OF THE AMERICAN PSYCHIATRIC ASSOCIATION.—Members of the Association should bear in mind that at the last annual meeting a new secretary, Dr. Earl D. Bond, was elected. Dr. Bond's address is 4401 Market St., West Philadelphia, Pa.

Inquiries concerning the business of the Association should be sent to Dr. Bond at this address as well as remittances for annual dues.

Appointments, Resignations, Etc.

ADLEMAN, DR. SARAH, appointed Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., May 27, 1924.

BAGLEY, DR. CARLETON T., appointed Medical Interne at Buffalo State Hospital at Buffalo, N Y., February 1, 1924.

BAILEY, DR. ALFRED, Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., resigned January 15, 1924.

BELL, DR. CYRIL B., Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., resigned June 9, 1924.

BERLINER, DR. KURT, appointed Medical Interne at Kings Park State Hospital at Kings Park, N. Y., May 4, 1924.

BERNAUER, DR. E. C., appointed Visiting Dermatologist at Brooklyn State Hospital at Brooklyn, N. Y., January, 1924.

BLACK, DR. GRANT N., appointed Medical Interne at Buffalo State Hospital at Buffalo, N. Y., June 25, 1924.

BROCHU, DR. M. D., resigned from superintendency of St. Michel-Archange Hospital, Mastai, Quebec, at the expiration of twenty years service.

BROUSSEAU, DR. ALBERT, formerly neuro-psychiatrist St. Ann's Hospital, Paris, appointed Clinical Director St. Michel-Archange Hospital, Mastai, Quebec, and Professor of Psychiatry, University of Laval, Quebec.

CARIN, DR. A., appointed Assistant Physician Hospital St. Michel-Archange, Mastai, Quebec.

CHAMBERS, DR. RALPH M., Assistant to the Commissioner of the Department of Mental Diseases of Massachusetts, elected Secretary-Treasurer of Massachusetts Psychiatric Society.

CLAUSS, DR. LEO, appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., February 25, 1924.

CONNELLY, DR. LEO A., appointed Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., July 1, 1924.

DALRYMPLE, DR. LEOLIA A., appointed Interne at Sheppard and Enoch Pratt Hospital at Towson, Md., July 27, 1924.

DAVENPORT, DR. ANNA K., Assistant Physician at Utica State Hospital at Utica, N. Y., resigned May 31, 1924.

DAVIS, DR. S. AUSTIN, formerly Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., died April 18, 1924, aged 67.

DEDERER, DR. EBBA A., Assistant Physician at Rome State School at Rome, N. Y., appointed Superintendent at Wisconsin Industrial Home for Girls at Taycheedah.

DENNES, DR. BLANCHE, Senior Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., was granted a year's leave of absence from May 14, 1924.

DONOGHUE, DR. EMMA A., Dentist at Brooklyn State Hospital at Brooklyn, N. Y., was granted a year's leave of absence from February 1, 1924.

DOOLITTLE, DR. RUSSELL C., appointed Physician in Charge of The Retreat at Des Moines, Iowa.

DRAKE, DR. FRANK I., Superintendent of State Hospital for the Insane at Mendota, Wis., resigned.

DUNTON, DR. WILLIAM RUSH, JR., Assistant Physician at Sheppard and Enoch Pratt Hospital at Towson, Md., for nearly 29 years, appointed Research Assistant July 1, 1924.

EBBERTS, DR. HARRY, Manager of Buffalo State Hospital at Buffalo, N. Y., resigned.

ECK, DR. WALTER E., apointed Dentist at St. Lawrence State Hospital at Ogdensburg, N. Y., June 1, 1924.

ELLIOTT, DR. GEORGE A., Interne at Ontario Hospital at Toronto, appointed Interne at Sheppard and Enoch Pratt Hospital at Towson, Md., August 30, 1924.

EVANS, DR. THEOPHILUS WATKINS, Superintendent of State Colony and Training School at Alexandria, La., died suddenly August 25 1924.

FERNALD, DR. WALTER E., Superintendent of Massachusetts School for Feebleminded at Waverly, elected President of Massachusetts Psychiatric Society.

FORD, DR. FRANK R., Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., resigned March 31, 1924.

FOX, DR. JAMES ERNEST, Assistant Physician at Western State Hospital at Hopkinsville, Ky., appointed City Health Officer at Paducah, Ky.

FROATS, DR. ESLEY R., appointed Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., June 17, 1924.

FURMAN, DR. ISAAC J., SR., Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., appointed First Assistant Physician at Buffalo State Hospital at Buffalo, N. Y. February 15, 1924, and transferred to Manhattan State Hospital June 10, 1924.

GARRATT, DR. GLENNA C., appointed Medical Interne at Kings Park State Hospital at Kings Park, N. Y., May 14, 1924.

GARVIN, DR. WILLIAM C., Superintendent of Kings Park State Hospital at Kings Park, N. Y., transferred to Binghamton State Hospital at Binghamton, N. Y., May 15, 1924.

GRANAY, DR. THOMAS LOGAN, Assistant Physician at Alton State Hospital at Alton, Ill., died suddenly March 5, 1924, of cerebral hemorrhage, aged 57.

GRANT, DR. ALFRED A., Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., resigned June 9, 1924.

GREEN, DR. MORTON K., Assistant Physician at State Hospital for the Insane at Mendota, Wis., appointed Superintendent.

GUNDRY, DR. RICHARD FITZ HARRIS, Medical Director of Richard Gundry Home at Catonsville, Md., died August 5, 1924, aged 58.

GUTHRIE, DR. LEWIS V., Superintendent of Huntington State Hospital at Huntington, West Va., appointed member of a commission to survey war veterans who are in neuropsychiatric hospitals in the fourth district.

HALL, DR. JAMES K., Medical Director of Westboro Sanitarium at Richmond, Va., appointed a member of the special Board of Directors of Central State Hospital at Petersburg, Va.

HATCH, DR. FREDERICK W., formerly Superintendent of Agnew State Hospital at Agnew, Calif., died February 24, 1924, of senility, aged 74.

HEROLD, DR. ROSS EDWARD, appointed Medical Interne at Willard State Hospital at Willard, N. Y., June 17, 1924.

HIBBARD, DR. ROGER J. B., appointed Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., June 21, 1924.

HILL, DR. GERSHOM H., Physician in Charge of The Retreat at Des Moines, Iowa, resigned.

HOCTOR, DR. EMMETT F., Assistant Physician at Hospital No. 3 at Nevada, Missouri, appointed Superintendent.

HOLMES, DR. BAYARD TAYLOR, formerly on the staff of Cook County Hospital at Dunning, Ill., died April 1, 1924, of heart disease, aged 71.

HORNIBROOK, DR. EDWARD, formerly Superintendent of State Hospital for the Insane at Independence, Iowa, died July 2, 1924, of paralysis.

HOUZE, DR. HARRY G., appointed Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., June 15, 1924.

HYNDMAN, DR. MARIE J., appointed Dentist at Brooklyn State Hospital at Brooklyn, N. Y., April 1924.

JAMES, DR. ELMER A., appointed Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., June 2, 1924.

JUDGE, DR. RAY H., Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., transferred to Central Islip State Hospital at Central Islip, N. Y., June 16, 1924.

KEILL, DR. KENNITH, appointed Medical Interne at Binghamton State Hospital at Binghamton, N. Y., May 1, 1924.

KENNEY, DR. RAYMOND L., appointed Chief of Staff at Wisconsin Psychiatric Institute.

KLINE, DR. GEORGE M., Commissioner of the Department of Mental Diseases of Massachusetts, elected Vice-President of Massachusetts Psychiatric Society.

LANG, DR. H. BECKETT, appointed Medical Interne at Willard State Hospital at Willard, N. Y., June 17, 1924.

LARRABEE, DR. CALLIE H., Medical Interne at Kings Park State Hospital at Kings Park, N. Y., resigned April 22, 1924.

LA RUE, DR., appointed Assistant Physician Hospital St. Michel-Archange, Mastai, Quebec.

LIPPMAN, DR. MORRIS C., Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., promoted to Assistant Physician June 14 1924.

LORENZ, DR. WILLIAM F., Director of Wisconsin State Psychiatric Institute appointed a member of the State Soldiers' Rehabilitation Board.

LORD, DR. FRANK R., Resident Medical Director of Orchard Springs Sanitarium at Dayton, Ohio, resigned.

MCCOWEN, DR. JENNIE, formerly Assistant Physician at State Hospital for the Insane at Mt. Pleasant, Iowa, died July 28, 1924, aged 78.

MCPEEK, DR. CHARLES E., appointed Assistant Physician at Brooklyn State Hospital at Brooklyn, N. Y., January 24, 1924.

MARTIN, DR. CAROLINE, Medical Interne at Manhattan State Hospital at Wards Island, N Y., resigned June 30, 1924.

MAXWELL, DR. THOMAS M., appointed Medical Interne at Central Islip State Hospital at Central Islip, N. Y., June 1, 1924.

MILLER, DR. J. C., appointed Assistant Physician Hospital St. Michel-Archange, Mastai, Quebec.

MILLER, DR. S. M., Chief Resident Physician, department for men Norristown State Hospital, Norristown, Pa., appointed Superintendent, September 4, 1924.

MILLS, DR. G. W., Director of Clinical Psychiatry at Central Islip State Hospital at Central Islip, N. Y., appointed Medical Inspector of the New York State Hospital Service.

MILLSPAUGH, DR. DANIEL T., Medical Director of Riverlawn Sanitarium at Paterson, N. J., died June 28, 1924, aged 68.

MITCHELL, DR. WILLIAM T. B., formerly Clinical Director at Westminster Hospital at London, England, appointed Lecturer in Psychiatry at McGill University at Montreal, Quebec.

MONTGOMERY, DR. J. MILTON, appointed Medical Interne at Utica State Hospital at Utica, N. Y., June 1, 1924.

MUNSON, DR. JAMES D., Superintendent of Michigan State Hospital at Traverse City for forty-five years, resigned June 30, 1924.

NATH, DR. MORRIS, appointed Medical Interne at Middletown State Homeopathic Hospita at Middletown, N. Y., June 1, 1924.

NOTKIN, DR. JOHN, reinstated as Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., February 4, 1924.

OLSON, DR. JOHN H., Dentist at St. Lawrence State Hospital at Ogdensburg, N. Y., resigned to enter private practice in Bedford Hills, N. Y., March 31, 1924.

PALMER, DR. HAROLD LUCIUS, formerly Superintendent of Utica State Hospital at Utica, N. Y., died April 26, 1924, aged 60.

PARKER, DR. MERRILL O., Senior Assistant Physician at St. Lawrence State Hospital at Ogdensburg, N. Y., resigned April 10, 1924.

PATTRELL, DR. ARTHUR E., Chief Executive Officer at Psychopathic Hospital at Boston, Mass., appointed First Assistant Physician at Sheppard and Enoch Pratt Hospital at Towson, Md., July 1, 1924.

PFEIFFER, DR. HENRY M., Assistant Physician at Sheppard and Enoch Pratt Hospital at Towson, Md., appointed Assistant Director of Essex County Juvenile Clinic at Newark, N. J., August 1, 1924.

PICOT, DR. LOUIS JULIEN, formerly Superintendent of State Hospital at Raleigh, N. C., died August 14, 1924, aged 71.

POST, DR. SAMUEL J., appointed Assistant Physician at Binghamton State Hospital at Binghamton, N. Y., May 13, 1924.

PULFORD, DR. DAYTON T., Medical Interne at Middletown State Homeopathic Hospital at Middletown N. Y., resigned March 31, 1924.

RAGSDALE, DR. ARCHER C., Assistant Physician at Alton State Hospital at Alton, Ill., died March 14, 1924, of influenza and meningitis, aged 62.

RAYNOR, DR. MORTIMER W., First Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., appointed Superintendent of Kings Park State Hospital at Kings Park, N. Y., May 15, 1924.

REISSIG, DR. ARTHUR J., Assistant Physician at Buffalo State Hospital at Buffalo, N. Y., resigned to enter private practice March 31, 1924.

REMINGTON, DR. JAMES H., Medical Interne at Binghamton State Hospital at Binghamton, N. Y., resigned April 17, 1924.

REXFORD, DR. HOMER I., Assistant Physician at Willard State Hospital at Willard, N. Y., promoted to Senior Assistant Physician June 1, 1924.

RICHTER, DR. W. G., Assistant Physician at Gowanda State Hospital at Collins, N. Y., promoted to Senior Assistant Physician May 16, 1924.

ROGERS, DR. CHARLES B. for thirteen years Resident Medical Director of Cincinnati Sanitarium at Cincinnati, Ohio, has taken charge of Orchard Springs Sanitarium at Dayton, Ohio.

ROSS, DR. JOHN R., formerly Superintendent of Dannemora State Hospital at Dannemora, N. Y., and recently Medical Inspector of New York State Hospital Service, appointed Superintendent of the new Harlem Valley Hospital at Wingate, N. Y.

ROWE, DR. CHARLES E., Senior Assistant Physician at Binghamton State Hospital at Binghamton, N. Y., appointed First Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., March 31, 1924.

ROWLAND, DR. EDWARD A., appointed Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., March 20, 1924.

SANCIER, DR. J., appointed Assistant Physician Hospital St. Michel-Archange, Mastai, Quebec.

SARTWELL, DR. RANSON H., Assistant Physician at Worcester State Hospital at Worcester, Mass., appointed Superintendent of Rhode Island Infirmary at Cranston.

SAUTHOFF, DR. AUGUST, appointed Clinical Director of Wisconsin State Hospital for the Insane at Mendota.

SHAW, DR. FRANCIS G., Assistant Physician at St. Lawrence State Hospital at Ogdensburg, N. Y., promoted to Senior Assistant Physician May 10, 1924.

SHEEHAN, DR. ROBERT F., appointed Manager of Harlem Valley State Hospital at Wingate, N. Y.

SINGER, DR. H. DOUGLAS, elected Medical Director of Illinois Society for Mental Hygiene.

SKIFF, DR. LAUREN C., appointed Dental Interne at Buffalo State Hospital at Buffalo, N. Y., June 1, 1924.

STEELE, DR. S. MARION, formerly Superintendent of Weston State Hospital at Weston, West Virginia, died suddenly August 11, 1924, aged 65.

SY BICO, DR. GILCERIO D., appointed Medical Interne at Middletown State Homeopathic State Hospital at Middletown, N. Y, July 2, 1924.

TREVASINO, DR. ANTHONY, Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., resigned June 30, 1924.

TUCKER, DR. W. LOUIS, Medical Interne at Buffalo State Hospital at Buffalo, N. Y., resigned February 24, 1924.

WILSON, DR. WILMER S., Medical Interne at Buffalo State Hospital at Buffalo, N. Y., resigned March 10, 1924.

WRIGHT, DR. WILLIAM W., First Assistant Physician at Buffalo State Hospital at Buffalo, N. Y., appointed Director of Clinical Psychiatry at Utica State Hospital at Utica, N. Y, February 1, 1924.

Thomas W. Salmon